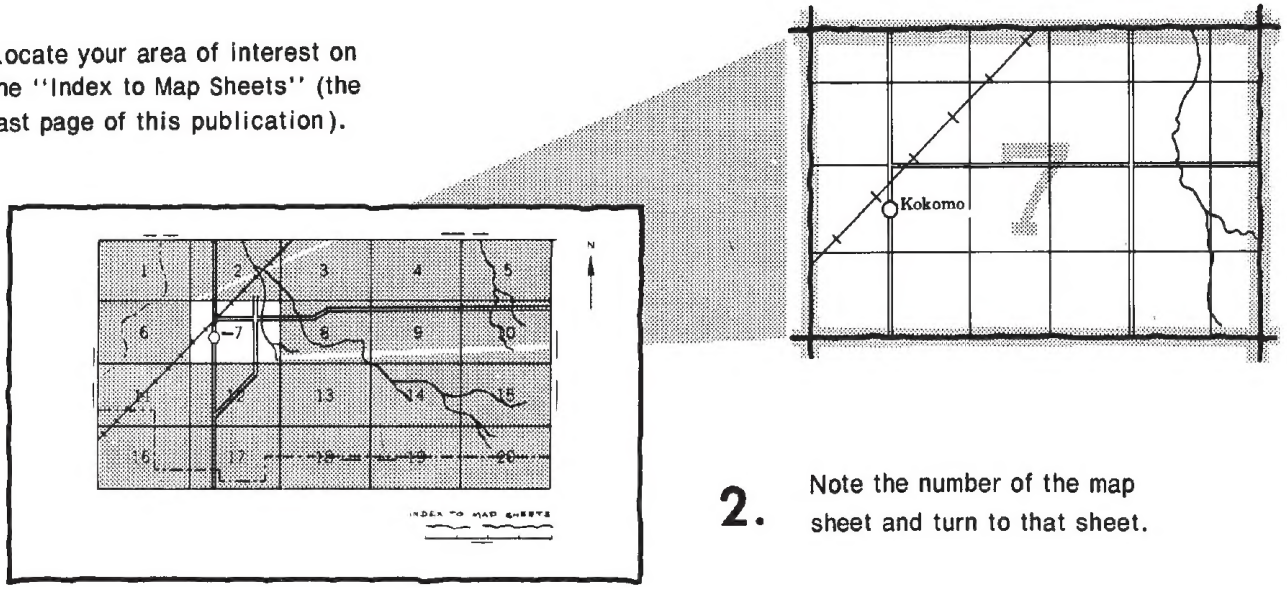
Soil Survey of

Edgecombe County, North Carolina

United States Department of Agriculture, Soil Conservation Service
in cooperation with the North Carolina Agricultural Experiment Station and the
Edgecombe County Board of Commissioners

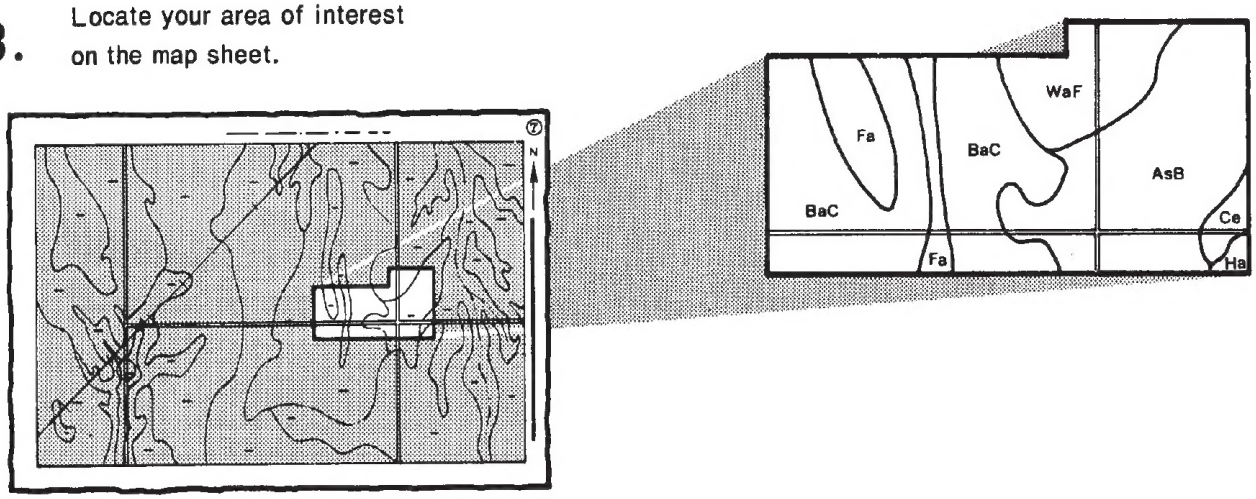
HOW TO USE

1. Locate your area of interest on the "Index to Map Sheets" (the last page of this publication).

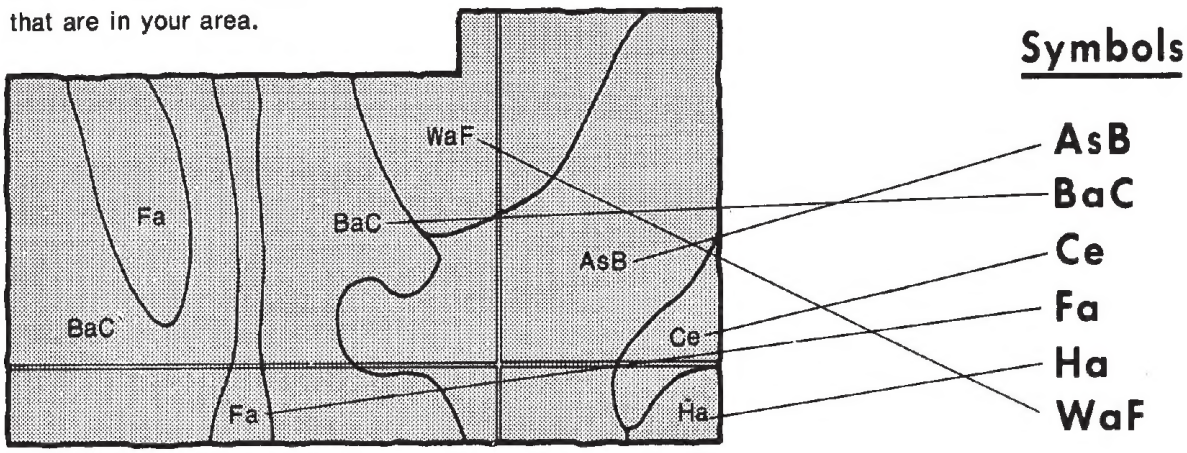


2. Note the number of the map sheet and turn to that sheet.

3. Locate your area of interest on the map sheet.

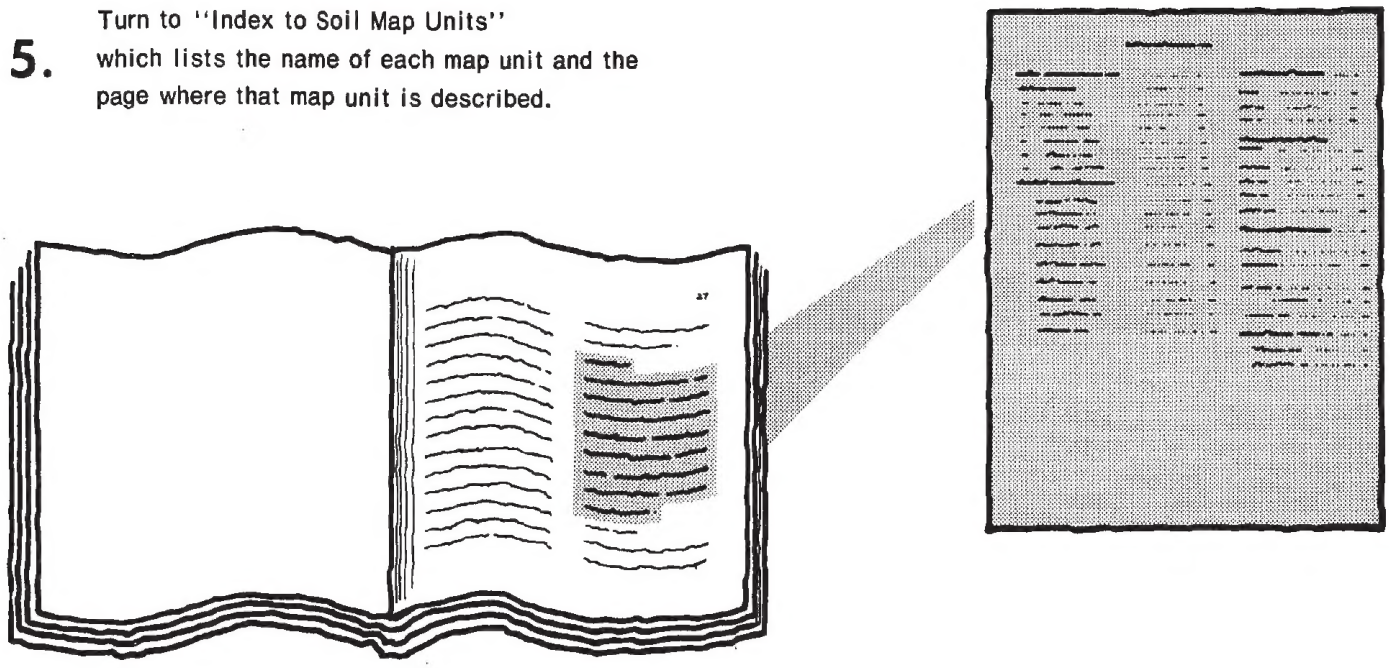


4. List the map unit symbols that are in your area.

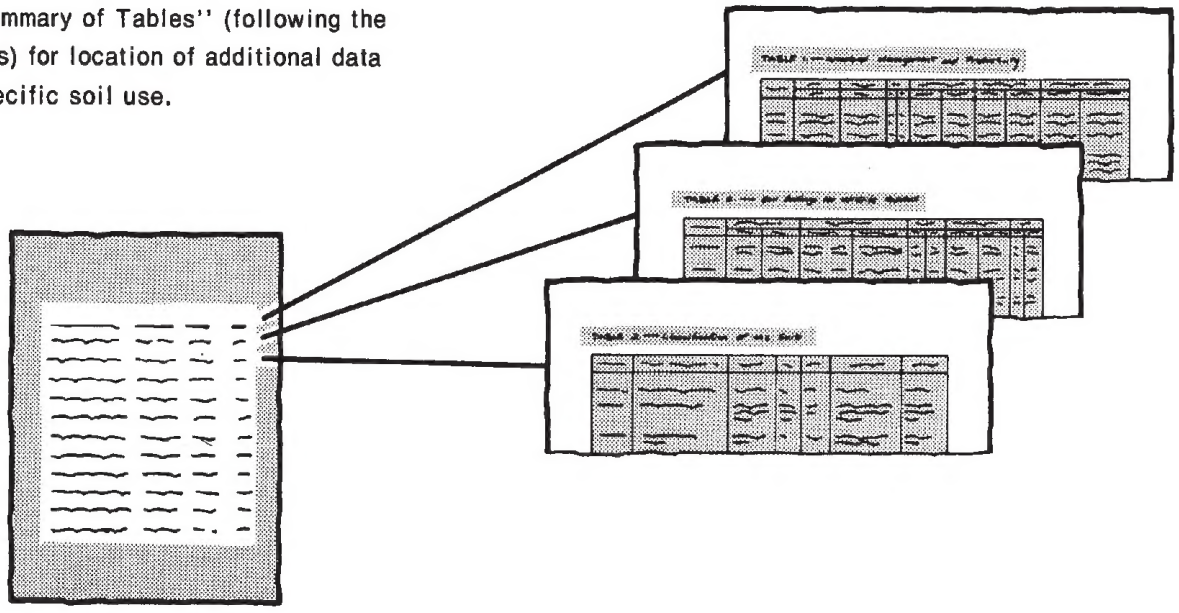


THIS SOIL SURVEY

5. Turn to "Index to Soil Map Units" which lists the name of each map unit and the page where that map unit is described.



6. See "Summary of Tables" (following the Contents) for location of additional data on a specific soil use.



7. Consult "Contents" for parts of the publication that will meet your specific needs. This survey contains useful information for farmers or ranchers, foresters or agronomists; for planners, community decision makers, engineers, developers, builders, or homebuyers; for conservationists, recreationists, teachers, or students; to specialists in wildlife management, waste disposal, or pollution control.

This is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and agencies of the States, usually the Agricultural Experiment Stations. In some surveys, other Federal and local agencies also contribute. The Soil Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

Major fieldwork for this soil survey was done in the period 1968-76. Soil names and descriptions were approved in 1976. Unless otherwise indicated, statements in the publication refer to conditions in the survey area in 1976. This survey was made cooperatively by the Soil Conservation Service, the North Carolina Agricultural Experiment Station, and the Edgecombe County Board of Commissioners. It is part of the technical assistance furnished to the Edgecombe County Soil and Water Conservation District.

Soil maps in this survey may be copied without permission, but any enlargement of these maps could cause misunderstanding of the detail of mapping and result in erroneous interpretations. Enlarged maps do not show small areas of contrasting soils that could have been shown at a larger mapping scale.

Cover: Peanut crop in an area of Norfolk loamy sand, 0 to 2 percent slopes.

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Issued November 1979

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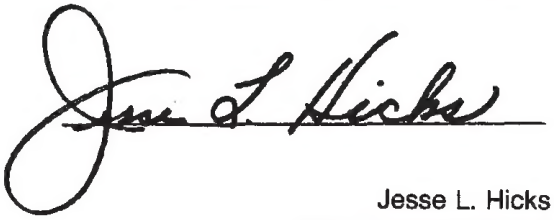
Foreword

This soil survey contains much information useful in land-planning programs in Edgecombe County, North Carolina. Of prime importance are the predictions of soil behavior for selected land uses. Also highlighted are limitations or hazards to land uses that are inherent in the soil, improvements needed to overcome these limitations, and the impact that selected land uses will have on the environment.

This soil survey has been prepared for many different users. Farmers, foresters, and agronomists can use it to determine the potential of the soil and the management practices required for food and fiber production. Planners, community officials, engineers, developers, builders, and homebuyers can use it to plan land use, select sites for construction, develop soil resources, or identify any special practices that may be needed to insure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the soil survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur even within short distances. Soils may be seasonally wet or subject to flooding. They may be shallow to bedrock. They may be too unstable to be used as a foundation for buildings or roads. Very clayey or wet soils are poorly suited to septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map; the location of each kind of soil is shown on detailed soil maps. Each kind of soil in the survey area is described, and much information is given about each soil for specific uses. Additional information or assistance in using this publication can be obtained from the local office of the Soil Conservation Service or the Cooperative Extension Service.



Jesse L. Hicks
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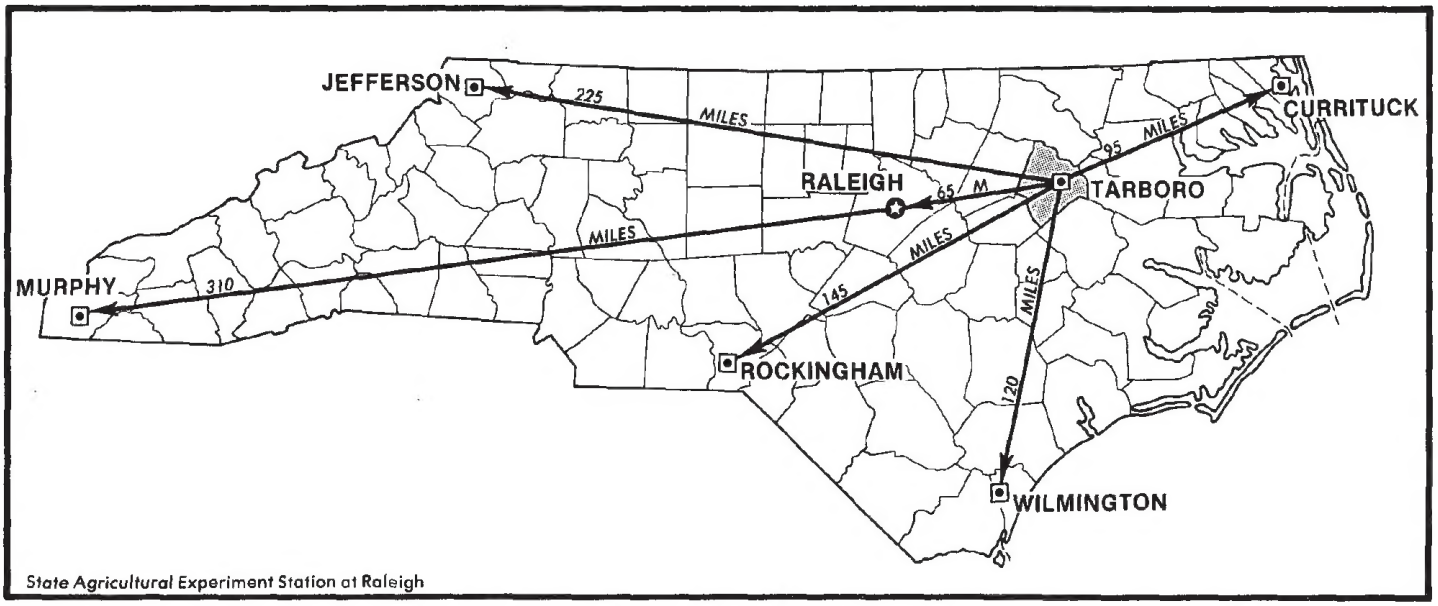

Location of Edgecombe County in North Carolina.

Soil Survey of Edgecombe County, North Carolina

By Roy A. Goodwin, Jr.

Soils Surveyed by Roy A. Goodwin, Jr., Henry S. Huntt, III, James Dunn, Glenwood A. Fields, and Everette Lynn, Soil Conservation Service, and David Rossiter, North Carolina State University

United States Department of Agriculture, Soil Conservation Service, in cooperation with the North Carolina Agricultural Experiment Station and the Edgecombe County Board of Commissioners

EDGECOMBE COUNTY is in the eastern part of North Carolina. In 1970, according to the North Carolina Population Census, Edgecombe County had a population of 52,341, and Tarboro, the county seat, had a population of 13,609.

This county is in the Coastal Plain physiographic province. It has a land area of 327,040 acres, or 511 square miles. It is bounded on the north by Halifax County, on the west by Nash County, on the south by Wilson and Pitt Counties, and on the east by Martin County.

General nature of the county

In the paragraphs that follow, the history; physiography, relief, and drainage; water supply; climate; and transportation and industry of Edgecombe County are described.

History

Edgecombe County was established by a legislative act in 1741 and was named after Lord Edgecombe, an English nobleman. At that time the county encompassed an area which included 17 modern counties. The town of Enfield was the first county seat. By 1764, Tarboro had become the permanent county seat. By 1883, Edgecombe County had assumed its current land area of 511 square miles (*4*).

The first settlers arrived by 1726, and the first settlement was Sparta, at the mouth of Town Creek. Tarboro and the vicinity were settled about 1733, and the town of Tarboro was incorporated in 1760. The early settlers of Edgecombe County were active during the Revolutionary War; and after the war, many new settlers, mostly from Virginia, came to the county (*4*).

Hunting and raising livestock were the major sources of food in the earliest years of settlement, but after the Revolutionary War, farming became the primary livelihood. Such crops as corn, peas, wheat, oats, rye, sweet potatoes, cotton, and flax were grown. Many of the farms in Edgecombe County became known throughout the South for their high yields.

Following the Civil War and Reconstruction, attention was again focused on agricultural development. By 1874, tobacco had become the most profitable crop. The favorable climate and the abundance of good land encouraged the tradition of agricultural diversification. With the development of good farm-to-market roads, Edgecombe County became an outstanding agricultural area. Tobacco, peanuts, cotton, soybeans, corn, and small grains are important crops. In recent years there has been a trend toward more livestock production.

The need for industrial development was also recognized during Reconstruction. In 1881, a cotton mill was established in Tarboro. By 1891 the county had four railways and three steamship lines. These transportation outlets helped to develop the industrial base and to found new towns such as Pinetops and Macclesfield (*4*).

Since its establishment, Edgecombe County has seen the development of a broad agricultural and industrial base. As agriculture has become more efficient, large numbers of people have left the farms and migrated to the cities. The development of industry in the county has opened up opportunities for retraining and for local employment. These opportunities have helped the population to grow slowly but steadily. In 1900, Edgecombe County had a population of 26,591 (*3*). By 1970, the population had grown to 52,341 (*4*).

Physiography, relief, and drainage

Edgecombe County is in the Coastal Plain physiographic province. The soils are underlain by unconsolidated sand, silt, and clay. Approximately 82 percent of the county is nearly level, 17 percent is gently sloping near the drainageways, and 1 percent consists of

sloping to strongly sloping side slopes adjacent to the drainageways.

The county slopes very gently eastward and southeastward. According to U.S. Geologic Survey quadrangle sheets, the highest elevation is about 140 feet, along the western boundary between Nash and Edgecombe Counties, and the lowest is about 10 feet, on the southeastern boundary where the Tar River leaves the county.

The Tar River drains the county. Movement of surface water is slow on the broad, nearly level divides and on the heavily vegetated, nearly level flood plains. Runoff is medium in the gently sloping areas near the drainageways and rapid on the sloping to strongly sloping side slopes adjacent to the drainageways. A few interstream areas such as Gatlin Woods are wide and have large areas of wet soils.

Water supply

Ground water, plentiful throughout the county, is near the surface in most places. It is easily tapped for municipal, household, and farm uses. Many farms have small excavated ponds less than 15 feet deep. A number of impounded ponds store larger water supplies. The ponds supply water for livestock, irrigation, and recreation. Wells furnish a large supply of water for municipal and household uses. In addition, Tarboro and Rocky Mount use the Tar River as their municipal water supply.

Climate

Edgecombe County is hot and generally humid in summer because of the moist maritime air. Winter is moderately cold but short because the mountains to the west protect the county against many cold waves. Precipitation is quite evenly distributed throughout the year and is adequate for all crops.

Table 1 gives data on temperature and precipitation for the survey area, as recorded at Tarboro in the period 1951 to 1973. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter the average temperature is 42 degrees F, and the average daily minimum temperature is 32 degrees. The lowest temperature on record, 3 degrees, occurred at Tarboro on January 13, 1962. In summer the average temperature is 78 degrees, and the average daily maximum is 89 degrees. The highest temperature, 105 degrees, was recorded on June 27, 1952.

Growing degree days, shown in table 1, are equivalent to "heat units." Beginning in spring, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

Of the total annual precipitation, 27 inches, or 56 percent, usually falls during the period April through September, which includes the growing season for most crops. Two years in 10, the April-September rainfall is less than 23 inches. The heaviest 1-day rainfall during the period of record was 5.09 inches at Tarboro on October 1, 1971. There are about 46 thunderstorms each year, and about 26 of these occur in summer.

Average seasonal snowfall is 6 inches. The greatest snow depth at any one time during the period of record was 13 inches. On the average, 2 days have at least 1 inch of snow on the ground, but the number of days varies greatly from year to year.

The average relative humidity in midafternoon in spring is less than 50 percent; during the rest of the year it is about 55 percent. Humidity is higher at night in all seasons, and the average at dawn is about 84 percent. The percentage of possible sunshine is 60 percent in summer and 55 percent in winter. Prevailing winds are southwesterly. Average windspeed is highest, 10 per miles per hour, in March.

In winter every few years, heavy snow covers the ground for a few days to a week. Every few years in late summer or autumn, a tropical storm moving inland from the Atlantic Ocean causes extremely heavy rain for 1 to 3 days.

Transportation and industry

Edgecombe County is served by major national and state highways, by a railroad, by three seaports, and by regional and national airports.

The major products and industries are textiles, tobacco processing, farm equipment manufacture, wood products, communications equipment, power tool manufacture, meat packing, and a variety of farm products.

How this survey was made

Soil scientists made this survey to learn what kinds of soil are in the survey area, where they are, and how they can be used. The soil scientists went into the area knowing they likely would locate many soils they already knew something about and perhaps identify some they had never seen before. They observed the steepness, length, and shape of slopes; the size of streams and the general pattern of drainage; the kinds of native plants or crops; the kinds of rock; and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material, which has been changed very little by leaching or by the action of plant roots.

The soil scientists recorded the characteristics of the profiles they studied, and they compared those profiles with others in counties nearby and in places more dis-

tant. Thus, through correlation, they classified and named the soils according to nationwide, uniform procedures.

After classifying and naming the soils, the soil scientists drew the boundaries of the soils on aerial photographs. These photographs show woodlands, buildings, field borders, roads, and other details that help in drawing boundaries accurately. The soil map at the back of this publication was prepared from aerial photographs.

The areas shown on a soil map are called soil map units. Some map units are made up of one kind of soil, others are made up of two or more kinds of soil, and a few have little or no soil material at all. Map units are discussed in the section "Soil maps for detailed planning."

While a soil survey is in progress, samples of soils are taken as needed for laboratory measurements and for engineering tests. The soils are field tested, and interpretations of their behavior are modified as necessary during the course of the survey. New interpretations are added to meet local needs, mainly through field observations of different kinds of soil in different uses under different levels of management. Also, data are assembled from other sources, such as test results, records, field experience, and information available from state and local specialists. For example, data on crop yields under defined practices are assembled from farm records and from field or plot experiments on the same kinds of soil.

But only part of a soil survey is done when the soils have been named, described, interpreted, and delineated on aerial photographs and when the laboratory data and other data have been assembled. The mass of detailed information then needs to be organized so that it is readily available to different groups of users, among them farmers, managers of woodland, engineers, planners, developers and builders, homebuyers, and those seeking recreation.

General soil map for broad land use planning

The general soil map at the back of this publication shows the soil associations in the survey area. Each association is a unique natural landscape—a distinct pattern of soils, relief, and drainage. Typically, an association consists of one or more major soils and some minor soils. It is named for the major soils. The soils making up one association can occur in other associations but in a different pattern.

The general soil map provides a broad perspective of the soils and landscapes in the survey area. It provides a basis for comparing the potential of large areas for general kinds of land use. Areas that are, for the most part, suited to certain kinds of farming or to other land uses can be identified on the map. Likewise, areas of soils having properties that are distinctly unfavorable for certain land uses can be located.

Because of its small scale, the map does not show the kind of soil at a specific site. Thus, it is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The kinds of soil in any one association differ from place to place in slope, depth, stoniness, drainage, or other characteristics that affect their management.

The relative terms assigned to soil potential classes are defined in the section "Soil maps for detailed planning."

Soil associations

1. Norfolk-Aycock-Wagram association

Nearly level to strongly sloping, well drained soils that have a loamy subsoil; on uplands

The soils in this association are in broad, slightly convex areas that are rounded along the drainageways. They are dissected by many drainageways that have short side slopes and narrow to wide flood plains.

This association makes up 44 percent of the county. It is about 30 percent Norfolk soils, 10 percent Aycock soils, 10 percent Wagram soils, and 50 percent soils of minor extent. These minor soils are in the Autryville, Bibb, Duplin, Exum, Goldsboro, Grantham, Johnston, Marlboro, and Rains series. The Bibb and Johnston soils are in the drainageways that dissect the association.

The nearly level to sloping Norfolk soils are well drained. The surface layer is brown loamy sand. The subsurface layer is light yellowish brown loamy sand. The subsoil is yellowish brown sandy clay loam in the upper part and brownish yellow sandy clay loam in the lower part.

The nearly level and gently sloping Aycock soils are well drained. The surface layer is grayish brown very fine sandy loam. The subsurface layer is light yellowish brown very fine sandy loam. The subsoil is brownish yellow loam in the upper part, yellowish brown and brownish yellow clay loam in the middle part, and reddish yellow loam in the lower part.

The nearly level to strongly sloping Wagram soils are well drained. The surface layer is dark grayish brown loamy sand. The subsurface layer is pale yellow loamy sand. The subsoil is yellowish brown and brownish yellow sandy clay loam in the upper part and brownish yellow sandy loam in the lower part.

Most of this association is cultivated. The rest is mainly in pasture and woodland.

Slope, susceptibility to erosion, permeability, susceptibility to leaching, and wetness are the main limitations to the use and management of the major soils in this association.

Most of the major soils in this association have high to medium potential for cultivated crops, urban uses, and woodland.

2. Goldsboro-Rains association

Nearly level, moderately well drained and poorly drained soils that have a loamy subsoil; on uplands

The soils in this association are in broad, smooth interstream areas and in shallow depressions.

This association makes up 18 percent of the county. It is about 30 percent Goldsboro soils, 30 percent Rains soils, and 40 percent soils of minor extent. These minor soils are in the Aycock, Coxville, Duplin, Exum, Foreston, Grantham, Lynchburg, Nahunta, and Norfolk series.

The nearly level Goldsboro soils are moderately well drained. The surface layer is dark grayish brown fine sandy loam. The subsurface layer is light yellowish brown fine sandy loam. The subsoil is brownish yellow fine sandy loam in the upper part; brownish yellow sandy clay loam and mottled gray, brownish yellow, strong brown, and yellowish red sandy clay loam in the middle part; and gray sandy clay loam in the lower part.

The nearly level Rains soils are poorly drained. The surface layer is very dark gray fine sandy loam. The subsurface layer is gray fine sandy loam. The subsoil is gray fine sandy loam and sandy clay loam.

Most of this association is cultivated. The rest is mainly in woodland and pasture.

Wetness is the main limitation to the use and management of the major soils in this association.

If drained, the major soils in this association have high potential for cultivated crops. The Goldsboro soils have medium potential for urban uses, and the Rains soils have low potential for urban uses because of wetness. Potential for woodland is high.

3. Tarboro-Altavista-Wickham association

Nearly level and gently sloping, somewhat excessively drained to moderately well drained soils that have a loamy subsoil or sandy underlying material; on stream terraces

The soils in this association are on smooth, low ridges and flats and in shallow depressions.

This association makes up 17 percent of the county. It is 25 percent Tarboro soils, 25 percent Altavista soils, 14 percent Wickham soils, and 36 percent soils of minor extent. These minor soils are in the Conetoe, Dogue, Portsmouth, Roanoke, and State series.

The nearly level and gently sloping Tarboro soils are somewhat excessively drained. The surface layer is brown loamy sand. The underlying material is yellowish brown and brownish yellow loamy sand in the upper part, yellow sand in the middle part, and very pale brown sand and coarse sand in the lower part.

The nearly level and gently sloping Altavista soils are moderately well drained. The surface layer is brown fine sandy loam. The subsoil is brownish yellow sandy clay loam in the upper part and mottled light gray, strong brown, very pale brown, and yellowish red sandy loam in the lower part.

The nearly level and gently sloping Wickham soils are well drained. The surface layer is brown sandy loam. The subsurface layer is reddish yellow sandy loam. The subsoil is reddish yellow sandy loam in the upper part, yellowish red sandy clay loam in the middle part, and yellowish red sandy loam in the lower part.

Most of this association is cultivated. The rest is mainly in woodland or pasture.

Wetness, flooding of low-lying areas, susceptibility to erosion, susceptibility to leaching, soil blowing, available water capacity, and permeability are the main limitations to the use and management of the soils in this association.

The major soils in this association have high to medium potential for cultivated crops, high potential for urban uses in higher lying areas, medium to low potential for urban uses in low-lying areas that are subject to flooding, and high to medium potential for woodland.

4. Roanoke-Conetoe-Portsmouth association

Nearly level and gently sloping, very poorly drained, poorly drained, and well drained soils that have a clayey to sandy subsoil; on stream terraces

The soils in this association are on broad flats and smooth to slightly rounded, low ridges, and in depressions.

This association makes up 15 percent of the county. It is 45 percent Roanoke soils, 15 percent Conetoe soils, 10 percent Portsmouth soils, and 30 percent soils of minor extent. These minor soils are in the Altavista, State, and Wahee series.

The nearly level Roanoke soils are poorly drained. The surface layer is dark grayish brown loam. The subsoil is gray clay loam, clay, and sandy clay loam.

The nearly level and gently sloping Conetoe soils are well drained. The surface layer is grayish brown loamy sand. The subsurface layer is light yellowish brown loamy sand. The subsoil is yellowish brown sandy loam in the upper part, strong brown sandy loam in the middle part, and strong brown loamy sand in the lower part.

The nearly level Portsmouth soils are very poorly drained. The surface layer is very dark gray fine sandy loam. The subsoil is light brownish gray sandy clay loam in the upper part and light brownish gray sandy loam in the lower part. The underlying material is light brownish gray loamy sand in the upper part and light gray loamy sand in the lower part.

About half of this association is cultivated or in pasture. The rest is mainly in woodland.

Wetness, flooding, permeability, low strength, shrink-swell potential, available water capacity, soil blowing, and susceptibility to leaching are the main limitations to the use and management of the major soils in this association.

Most of the major soils, if drained, have high to medium potential for a few cultivated crops, low potential for urban uses, and high to medium potential for woodland.

5. Wehadkee-Congaree association

Nearly level, well drained and poorly drained soils that have loamy and sandy underlying material; on flood plains

The soils in this association are in broad areas along streams.

This association makes up 3 percent of the county. It is 55 percent Wehadkee soils, 20 percent Congaree soils, and 25 percent soils of minor extent. These minor soils are in the Ballahack, Cape Fear, Chewacla, Meggett, Portsmouth, Roanoke, and Tarboro series.

The nearly level Wehadkee soils are poorly drained. The surface layer is brown silt loam. The underlying material is light brownish gray loam in the upper part, gray loam in the middle part, and gray clay loam in the lower part.

The nearly level Congaree soils are well drained. The surface layer is brown silt loam. The underlying material is dark yellowish brown silty clay loam in the upper part; strong brown fine sandy loam, brownish yellow fine sand, and strong brown fine sandy loam in the middle part; and very pale brown fine sand in the lower part.

Most of this association is in woodland. The rest is mainly in pasture.

Flooding and wetness are the main limitations to the use and management of the major soils in this association (fig. 1).

Most of the major soils in this association have low potential for cultivated crops; potential is high, however, in areas that are drained or not flooded. Potential is low for urban uses and very high for woodland.

6. Bibb-Johnston association

Nearly level, poorly drained and very poorly drained soils that have loamy and sandy underlying material; on flood plains

The soils in this association are in narrow to moderately broad areas along major streams.

This association makes up 3 percent of the county. It is 75 percent Bibb soils, 20 percent Johnston soils, and 5 percent soils of minor extent. These minor soils include soils in the Johns, Lumbee, and Kenansville series.

The nearly level Bibb soils are poorly drained. The surface layer is dark grayish brown loam. The underlying material is gray and dark gray loam in the upper part, dark gray and very dark gray loamy sand and sandy loam in the middle part, and very dark grayish brown and grayish brown loamy sand in the lower part.

The nearly level Johnston soils are very poorly drained. The surface layer is black mucky loam. Below this is a layer of dark gray fine sandy loam. The underlying material is light brownish gray loamy sand.

Most of this association is in woodland. A small acreage is in pasture.

Flooding and wetness are the main limitations to the use and management of the major soils in this association.

The major soils in this association have low potential for cultivated crops, low potential for urban uses, and high potential for woodland.

Soil maps for detailed planning

The map units shown on the detailed soil maps at the back of this publication represent the kinds of soil in the survey area. They are described in this section. The descriptions together with the soil maps can be useful in determining the potential of a soil and in managing it for food and fiber production; in planning land use and developing soil resources; and in enhancing, protecting, and preserving the environment. More information for each map unit, or soil, is given in the section "Use and management of the soils."

Preceding the name of each map unit is the symbol that identifies the soil on the detailed soil maps. Each soil description includes general facts about the soil and a brief description of the soil profile. In each description, the principal hazards and limitations are indicated, and the management concerns and practices needed are discussed.

Relative terms are assigned to soil potential classes to indicate the quality of a soil for a particular use compared to that of other soils in the county. Potential is the capacity of the soil to produce, yield, or support a given structure or activity if modern technology is applied to the soil. Four basic steps are involved in determining potential: (1) identify for each soil use those soil properties and features that affect the anticipated use; (2) identify and evaluate the kinds of practices that can be used to overcome the limiting soil features; (3) evaluate the level of performance or yield of each soil after installation of acceptable practices, and array the soils from those that are best suited to those that are least suited; (4) rate the potential of each soil high, medium, or low according to the following definitions.

High potential.—Production or performance is at or above the level of local standards, practices available for overcoming soil limitations are judged locally to be economically feasible, and continuing limitations after corrective practices have been installed do not detract appreciably from environmental quality or economic returns.

Medium potential.—Soils intermediate between those soils that qualify for high potential and those that qualify for low potential. Production or performance is somewhat below local standards, costs of overcoming limitations are high, or limitations continuing after corrective practices have been installed detract from environmental quality or economic returns.

Low potential.—Production or performance is significantly below local standards, practices required to overcome limitations are costly, or limitations continuing after corrective practices have been installed detract appreciably from environmental quality or economic returns.

Five classes are used for rating the potential productivity of the soils for important trees. These classes are described in the section "Woodland management and productivity."

The map units on the detailed soil maps represent an area on the landscape made up mostly of the soil or soils for which the unit is named. Most of the delineations shown on the detailed soil map are phases of soil series.

Soils that have profiles that are almost alike make up a *soil series*. Except for allowable differences in texture of the surface layer or of the underlying substratum, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement in the profile. A soil series commonly is named for a town or geographic feature near the place where a soil of that series was first observed and mapped. The Tarboro series, for example, was named for the town of Tarboro in Edgecombe County.

Soils of one series can differ in texture of the surface layer or in the underlying substratum and in slope, erosion, stoniness, salinity, wetness, or other characteristics that affect their use. On the basis of such differences, a soil series is divided into phases. The name of a *soil phase* commonly indicates a feature that affects use or management. For example, Norfolk loamy sand, 0 to 2 percent slopes, is one of several phases within the Norfolk series.

Some map units are made up of two or more dominant kinds of soil. Such map units are called soil complexes and undifferentiated groups.

A *soil complex* consists of areas of two or more soils that are so intricately mixed or so small in size that they cannot be shown separately on the soil map. Each area includes some of each of the two or more dominant soils, and the pattern and proportion are somewhat similar in all areas. Grantham-Urban land complex is an example.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because there is little value in separating them. The pattern and proportion of the soils are not uniform. An area shown on the map has at least one of the dominant (named) soils or may have all of them. Bibb soils is an undifferentiated group in this survey area.

Most map units include small, scattered areas of soils other than those that appear in the name of the map unit. Some of these soils have properties that differ substantially from those of the dominant soil or soils and thus could significantly affect use and management of the map unit. These soils are described in the description of each map unit. Some of the more unusual or strongly contrasting soils that are included are identified by a special symbol on the soil map.

Most mapped areas include places that have little or no soil material and support little or no vegetation. Such places are called *miscellaneous areas*; they are delineated on the soil map and given descriptive names. Pits is an example. Some of these areas are too small to be delineated and are identified by a special symbol on the soil map.

The acreage and proportionate extent of each map unit are given in table 4, and additional information on properties, limitations, capabilities, and potentials for many soil uses is given for each kind of soil in other tables in this survey. (See "Summary of tables.") Many of the terms used in describing soils are defined in the Glossary.

Soil descriptions

AaA—Altavista fine sandy loam, 0 to 3 percent slopes. This moderately well drained soil is on smooth, low ridges and flats and in shallow depressions in stream terraces. The mapped areas are 4 to 50 acres in size.

Typically, the surface layer is brown fine sandy loam 9 inches thick. The subsoil is 41 inches thick. It is brownish yellow sandy clay loam in the upper part and mottled light gray, strong brown, very pale brown, and yellowish red sandy loam in the lower part. The underlying material extends to a depth of 80 inches or more. It is mottled light gray, strong brown, and very pale brown sandy loam in the upper part and light yellowish brown loamy coarse sand in the lower part.

Included with this soil in mapping are a few small areas of Dogue and State soils. Also included are small areas of soils that have a loamy fine sand surface layer and a few small areas of soils that have higher silt content or lower clay content than is normal for the Altavista series. Also included are a few low-lying areas of soils that are subject to flooding.

The organic matter content in the surface layer is low. Permeability is moderate, available water capacity is medium, and shrink-swell potential is low. The subsoil is dominantly strongly acid or very strongly acid but ranges to medium acid. The seasonal high water table is at a depth of about 1.5 to 2.5 feet during late winter and early spring (fig. 2).

Most of the acreage of this soil is cultivated. The rest is mainly in pasture or woods.

This soil has high potential for corn, soybeans, peanuts, tobacco, cotton, and small grain. Seasonal wetness is a limitation for some specialty crops such as tobacco. Winter cover crops, minimum tillage, and crop residue management help maintain tilth and production. Conservation practices such as no-till planting, field borders, and crop rotations that include close-growing crops also help conserve soil and water. Artificial drainage is generally required to prevent tobacco from drowning during wet seasons. The potential for pasture forages is high.

The potential for most urban uses is medium to low because of wetness. The potential is medium for urban uses such as dwellings without basements. The potential for most recreational uses is high to medium because of wetness.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are black tupelo, elm, yellow-poplar, sweetgum, hickory, red maple, American beech, willow oak, white oak, post oak, southern red oak, water oak, and loblolly pine. The understory species are mainly dogwood, sweetbay, sourwood, American holly, waxmyrtle, and sassafras. Wetness is the main limitation for woodland use and management. Capability subclass IIw; woodland group 2w.

AuB—Autryville loamy sand, 0 to 6 percent slopes. This well drained soil is in smooth to slightly rounded, broad areas on uplands. The mapped areas are 4 to 100 acres in size.

Typically, the surface layer is dark grayish brown loamy sand 4 inches thick. The subsurface layer is light yellowish brown loamy sand 22 inches thick. The subsoil extends to a depth of 84 inches or more. It is yellowish brown sandy loam in the upper part, brownish yellow loamy sand in the middle part, and pale yellow sandy loam in the lower part.

Included with this soil in mapping are a few small areas of soils in which the surface and subsurface layers are thinner than 20 inches. Also included are a few small areas of Foreston, Pactolus, and Wagram soils.

The organic matter content of the surface layer is very low. Permeability is moderately rapid in the upper part of the subsoil and moderate in the lower part of the subsoil, available water capacity is low, and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is below a depth of 6 feet.

About half of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

This soil has medium to high potential for corn, soybeans, peanuts, tobacco, and small grain. Leaching of plant nutrients, soil blowing, and available water capacity are the main limitations. Blowing sand can damage young plants. Winter cover crops, minimum tillage, and crop residue management help maintain organic matter content and conserve moisture. Conservation practices such as no-till planting, windbreaks, and crop rotations that include close-growing crops also help conserve soil and water. Fertilizers, particularly nitrogen, should be added in split applications. There is high potential for pasture forages such as Coastal bermudagrass and bahiagrass.

The potential for most urban uses is high. The potential for recreational uses is medium because of the sandy surface layer.

This soil has moderately high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, longleaf pine, red maple, hickory, sweetgum, black tupelo, southern red oak, white oak, and post oak. The understory species are mainly dogwood, sassafras, American holly, sourwood, and waxmyrtle. Low available water capacity is the main limitation in woodland use and management. Capability subclass IIs; woodland group 3s.

AyA—Aycock very fine sandy loam, 0 to 2 percent slopes. This well drained soil is in broad, smooth interstream areas on uplands. The mapped areas are 4 to 75 acres in size.

Typically, the surface layer is grayish brown very fine sandy loam 7 inches thick. The subsurface layer is light yellowish brown very fine sandy loam 4 inches thick. The subsoil extends to a depth of 90 inches or more. It is brownish yellow loam in the upper part, yellowish brown and brownish yellow clay loam in the middle part, and reddish yellow loam in the lower part.

Included with this soil in mapping are a few small areas of soils that have a loamy very fine sand or fine sandy loam surface layer and a few areas of soils that have a redder subsoil than Aycock soils. Also included are small areas of Exum, Marlboro, and Norfolk soils.

The organic matter content of the surface layer is low. Permeability is moderate, available water capacity is high, and shrink-swell potential is low. The subsoil is very strongly acid or strongly acid. The seasonal high water table is below a depth of 6 feet.

Most of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

The potential is high (figs. 3 and 4) for corn, soybeans, peanuts, tobacco, cotton, and small grain. Runoff is the main limitation. Winter cover crops, minimum tillage, and crop residue management help control runoff and erosion and maintain tilth and organic matter content. Conservation practices such as no-till planting, field borders, and crop rotations that include close-growing crops also help conserve soil and water. The potential for pasture forages is high.

The potential for most urban uses is high. Permeability influences the performance of septic tank absorption fields, but this limitation generally can be overcome by modifying the field or by increasing the size of the absorption area, or both. Low strength affects design and

construction of roads. The potential for recreational uses is high.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, red maple, hickory, yellow-poplar, black tupelo, American elm, southern red oak, water oak, and white oak. The understory species are mainly dogwood, sassafras, sourwood, and waxmyrtle. There are no major limitations for woodland use and management. Capability subclass IIe; woodland group 2o.

AyB—Aycock very fine sandy loam, 2 to 6 percent slopes. This well drained soil is in slightly rounded areas on uplands. The mapped areas are 4 to more than 100 acres in size.

Typically, the surface layer is grayish brown very fine sandy loam 7 inches thick. The subsurface layer is light yellowish brown very fine sandy loam 4 inches thick. The subsoil extends to a depth of 90 inches or more. It is brownish yellow loam in the upper part, yellowish brown and brownish yellow clay loam in the middle part, and reddish yellow loam in the lower part.

Included with this soil in mapping are small areas of soils that have a loamy very fine sand or fine sandy loam surface layer and a few small areas of soils that have a redder subsoil than Aycock soils. Also included are a few small areas of Duplin, Marlboro, and Norfolk soils.

The organic matter content of the surface is low. Permeability is moderate, available water capacity is high, and shrink-swell potential is low. The subsoil is very strongly acid or strongly acid. The seasonal high water table is below a depth of 6 feet.

Most of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

The potential is high for corn, soybeans, peanuts, tobacco, cotton, and small grain. Slope, runoff, and susceptibility to erosion are the main limitations. Winter cover crops, minimum tillage, and crop residue management help control runoff and erosion and maintain tilth and organic matter content. Conservation practices such as contour stripcropping, no-till planting, field borders, and crop rotations that include close-growing crops also help conserve soil and water. The potential for pasture forages is high.

The potential for most urban uses is high. Permeability influences the performance of septic tank absorption fields, but this limitation generally can be overcome by modifying the field or by increasing the size of the absorption area, or both. Low strength affects design and construction of roads. The potential for most recreational uses is high. The potential for playgrounds is medium because of slope.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, red maple, hickory, yellow-poplar, black tupelo, American elm, southern red oak, water oak, and white oak. The understory species are mainly dogwood, sassafras, sourwood, and waxmyrtle. There are no major limitations for woodland use and management. Capability subclass IIIe; woodland group 2o.

Ba—Ballahack fine sandy loam. This nearly level, very poorly drained soil is in slightly depressional drainageways and shallow depressions in stream terraces. The mapped areas are 10 to more than 100 acres in size.

Typically, the surface layer is 35 inches thick. It is very dark gray fine sandy loam in the upper part, very dark gray sandy clay loam in the middle part, and black sandy clay loam in the lower part. The underlying material to a depth of 74 inches is light brownish gray sandy loam in the upper part, dark grayish brown sandy clay in the middle part, and light brownish gray loamy sand in the lower part.

Included with this soil in mapping are a few areas of soils that have a surface layer less than 24 inches thick and clay content of less than 18 percent in the upper 40 inches, and small areas of soils that have a surface layer of loam. Also included are a few small areas of Cape Fear and Portsmouth soils.

The organic matter content of the surface layer is high. Permeability is moderate to moderately rapid, the available water capacity is high, and the shrink-swell potential is low. Reaction is strongly acid or very strongly acid in all horizons within 60 inches of the surface. The seasonal high water table is at or near the surface. This soil is frequently flooded for brief periods.

About half of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

If drained and protected from flooding, this soil has high potential for corn, soybeans, and small grain. There is low potential for tobacco, cotton, and peanuts. Wetness and flooding are the main limitations. Minimum tillage, cover crops, and the inclusion of grasses and legumes in the conservation cropping system help maintain tilth and production. Tillage is delayed in spring in some years because of wetness. Lack of suitable outlets is a limitation to the installation of drainage systems. The potential for pasture forages, such as fescue and ladino clover, is high.

The potential for most urban and recreational uses is low because of flooding and wetness.

This soil has very high potential for broad-leaved and needle-leaved trees. The dominant native trees are baldcypress, pond pine, red maple, ash, hickory, sweetgum, swamp tupelo, elm, yellow-poplar, river birch, water oak, willow oak, and swamp white oak. The understory species are mainly cedar, American holly, sweetbay, sourwood, reeds, and waxmyrtle. Wetness and flooding are the main limitations for woodland use and management. Capability subclass IIIw; woodland group 1w.

BB—Bibb soils. These nearly level, poorly drained soils are in long, narrow to moderately broad areas on flood plains. The mapped areas are generally 50 to several hundred acres in size. In this map unit, the texture of the surface layer is more variable than it is in most other map units; and areas of this map unit are generally larger than those of most other map units. Mapping has been controlled well enough, however, to make interpretations for the anticipated uses of the soils.

Typically, the surface layer is dark grayish brown loam 8 inches thick. The underlying material to a depth of 66 inches is gray and dark gray loam in the upper part, dark gray and very dark gray loamy sand and sandy loam in the middle part, and very dark grayish brown and grayish brown loamy sand in the lower part.

Included with these soils in mapping are small areas of soils that are not acid in the lower part and that have marl layers at a depth of 4 to 8 feet. Also included are small areas of soils in which clay content is more than 18 percent between depths of 10 and 40 inches. A few small areas of Johnston and Lumbee soils are also included.

The organic matter content of the surface layer is medium. Permeability is moderate, the available water capacity is high, and the shrink-swell potential is low. These soils are strongly acid or very strongly acid throughout except where limed. The seasonal high water table is at a depth of 0.5 foot to 1.5 feet. These soils are commonly flooded for brief periods.

Most of the acreage of these soils is in woodland. A small acreage is in pasture.

These soils have low potential for crop production. Flooding and wetness are the main limitations. Lack of suitable outlets is a limitation to the installation of drainage systems. The potential is high for pasture forages, such as fescue and ladino clover, where the soil is drained and protected from flooding.

The potential for most urban and recreational uses is low because of flooding and wetness.

This soil has high potential for broad-leaved trees. The dominant native trees are baldcypress, pond pine, red maple, green ash, hickory, sweetgum, swamp tupelo, elm, river birch, water oak, willow oak, and swamp white oak. The understory species are mainly cedar, American holly, sweetbay, sourwood, reeds, and waxmyrtle. Wetness and flooding are the main limitations for woodland use and management. Capability subclass Vw; woodland group 2w.

BnB—Blanton sand, 0 to 6 percent slopes. This moderately well drained soil is in smooth to slightly rounded, broad areas on uplands. The mapped areas are 4 to 15 acres in size.

Typically, the surface layer is dark grayish brown sand 4 inches thick. The subsurface layer is 43 inches thick. It is light yellowish brown sand in the upper part and pale yellow sand in the lower part. The subsoil extends to a depth of 83 inches or more. It is light yellowish brown sand in the upper part and brownish yellow sandy loam and light brownish gray sandy clay loam in the lower part.

Included with this soil in mapping are a few small areas of Autryville and Wagram soils.

The organic matter content of the surface layer is very low. Permeability is rapid in the surface layer and moderate in the subsoil, available water capacity is very low, and shrink-swell potential is very low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is below a depth of 6 feet.

Most of the acreage of this soil is in woodland. The rest is mainly in pasture or is cultivated.

This soil has medium potential for a few crops such as peanuts. It lacks sufficient moisture for most crops during the growing season. Leaching of plant nutrients, soil blowing and available water capacity are the main limitations. Blowing sand can damage young plants. Minimum tillage, crop residue management, windbreaks, and the inclusion of close-growing grasses and legumes in the cropping system help control soil blowing and conserve moisture. Fertilizers, particularly nitrogen, should be added in split applications. There is medium potential for pasture forages such as Coastal bermudagrass and bahiagrass.

The potential for most urban uses is high. The potential for most recreational uses is medium or low because of the sandy surface layer.

This soil has moderately high potential for needle-leaved trees. The dominant native trees are loblolly pine, longleaf pine, southern red oak, blackjack oak, white oak, post oak, and red maple. The understory species are mainly dogwood, sassafras, and American holly. Very low available water capacity is the main limitation in woodland use and management. Capability subclass IIIs; woodland group 3s.

Ca—Cape Fear loam. This nearly level, very poorly drained soil is on broad flats and in slightly depressional drainageways and oval depressions in stream terraces. The mapped areas are 4 to more than 100 acres in size.

Typically, the surface layer is black loam 15 inches thick. The subsoil is 50 inches thick. It is dark gray clay loam in the upper part, dark gray clay in the middle part, and grayish brown sandy clay loam in the lower part. The underlying material to a depth of 80 inches is dark grayish brown sand.

Included with this soil in mapping are a few small areas of Portsmouth and Roanoke soils.

The organic matter content of the surface layer is high. Permeability is slow, the available water capacity is high, and shrink-swell potential is moderate. The subsoil is dominantly strongly acid or very strongly acid but ranges to medium acid. The seasonal high water table is at or near the surface. The soil is frequently flooded for brief periods.

Most of the acreage of this soil is in woodland. The rest is mainly in pasture and cultivation.

If drained and protected from flooding, this soil has high potential for corn, soybeans, and small grain. There is low potential for tobacco, cotton, and peanuts. Wetness and flooding are the main limitations. Minimum tillage, cover crops, and the inclusion of grasses and legumes in the conservation cropping system help maintain tilth and production. Tillage may be delayed in spring because of wetness. Lack of suitable outlets and slow permeability are limitations to the installation of drainage systems. The potential for pasture forages, such as fescue and ladino clover, is high.

The potential for most urban and recreational uses is low because of flooding, wetness, permeability, and low strength.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are baldcypress, pond pine, loblolly pine, red maple, green ash, hickory, sweetgum, swamp tupelo, elm, river birch, water oak, willow oak, and swamp white oak. The understory species are mainly cedar, American holly, sweetbay, sourwood, reeds, and waxmyrtle. Wetness and flooding are the main limitations for woodland use and management. Capability subclass IIIw; woodland group 2w.

Cc—Chewacla silt loam. This nearly level, somewhat poorly drained soil is in smooth areas on flood plains. The mapped areas are 5 to more than 50 acres in size.

Typically, the surface layer is brown silt loam 16 inches thick. The subsoil extends to a depth of 99 inches or more. It is brown clay loam in the upper part and gray clay loam in the lower part.

Included with this soil in mapping are small areas of Congaree and Wehadkee soils.

The organic matter content of the surface layer is low. Permeability is moderate, the available water capacity is high, and shrink-swell potential is low. The subsoil is dominantly very strongly acid or strongly acid but ranges to slightly acid. The seasonal high water table is about 0.5 foot to 1.5 feet below the surface during the late winter and early spring. This soil is commonly flooded for brief periods.

Most of this soil is in forest. A few areas are in pasture, and the rest is cultivated.

This soil has medium potential for water-tolerant row crops such as corn and soybeans. These crops, however, can be damaged by flooding. Tillage can be delayed in spring because of wetness. Drainage and flood prevention are needed for most uses. Minimum tillage, cover crops, and the inclusion of grasses and legumes in the conservation cropping system help maintain tilth and production. Lack of suitable outlets is a limitation to the installation of drainage systems. The potential for pasture forages such as fescue and ladino clover is high.

The potential for most urban and recreational uses is low because of flooding and wetness, which are difficult and costly to overcome.

This soil has very high potential for broad-leaved trees. The dominant trees are yellow-poplar, baldcypress, red maple, hickory, swamp tupelo, American elm, water oak, swamp white oak, American sycamore, sweetgum, green ash, birch, and willow oaks. The understory species are mainly sweetbay, reeds, waxmyrtle, and sourwood. Wetness and flooding are the main limitations for woodland use and management. Capability subclass IIw; woodland group 1w.

CeB—Conetoe loamy sand, 0 to 4 percent slopes. This well drained soil is on smooth to slightly rounded, low ridges on stream terraces. The mapped areas are 4 to 100 acres in size.

Typically, the surface layer is grayish brown loamy sand 8 inches thick. The subsurface layer is light yellowish brown loamy sand 17 inches thick. The subsoil is 23 inches thick. It is yellowish brown sandy loam in the upper part, strong brown sandy loam in the middle part, and strong brown loamy sand in the lower part. The underlying material extends to a depth of 90 inches or more. It is reddish yellow sand in the upper part and very pale brown sand in the lower part.

Included with this soil in mapping are a few areas of State, Tarboro, and Wickham soils. Also included are a few low-lying areas that are subject to flooding.

The organic matter content of the surface layer is very low. Permeability is moderately rapid, available water capacity is low, and shrink-swell potential is low. The subsoil ranges from very strongly acid to medium acid. The seasonal high water table is below a depth of 6 feet.

About half of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

This soil has medium to high potential for corn, soybeans, peanuts (fig. 5), tobacco (fig. 6), and small grain. Leaching of plant nutrients, soil blowing, and low available water capacity are the main limitations. Blowing sand can damage young plants. Winter cover crops, minimum tillage, and crop residue management help maintain organic matter content and conserve moisture. Conservation practices such as no-till planting, windbreaks, and crop rotations that include close-growing crops also help conserve soil and water. Fertilizers, particularly nitrogen, should be added in split applications. There is high potential for pasture forages such as Coastal bermudagrass and bahiagrass.

The potential for most urban uses is high. The potential for recreational uses is medium because of the sandy surface layer.

This soil has moderately high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, longleaf pine, red maple, hickory, sweetgum, black tupelo, southern red oak, white oak, and post oak. The understory species are mainly

dogwood, sassafras, American holly, sourwood, and waxmyrtle. Low available water capacity is the main limitation in woodland use and management. Capability subclass IIs; woodland group 3s.

Cn—Congaree silt loam. This nearly level, well drained soil is in slightly rounded, higher areas on flood plains. The mapped areas are 5 to 100 acres in size.

Typically, the surface layer is brown silt loam 7 inches thick. The underlying material to a depth of 93 inches is dark yellowish brown, mottled silty clay loam in the upper part; strong brown fine sandy loam; brownish yellow fine sand, and strong brown fine sandy loam in the middle part; and very pale brown fine sand in the lower part.

Included with this soil in mapping are a few small areas of Chewacla, Tarboro, and Wehadkee soils.

The organic matter content of the surface layer is low. Permeability is moderate, available water capacity is high, and shrink-swell potential is low. This soil is dominantly strongly acid or very strongly acid throughout except where limed, but reaction ranges to neutral. The seasonal high water table is at a depth of about 2.5 to 4 feet in late winter and early spring. This soil is frequently flooded for brief periods.

Most of this soil is in woodland. The rest is mainly in pasture.

This soil has high potential for corn, soybeans, and small grain; these crops, however, can be damaged by flooding (fig. 7). Flood prevention is needed for most uses. Minimum tillage, cover crops, and the inclusion of grasses and legumes in the cropping system help maintain tilth and production. There is high potential for pasture forages such as fescue and ladino clover.

This soil has low potential for most urban and recreational uses because of flooding, which is difficult and costly to overcome.

There is very high potential for broad-leaved and needle-leaved trees. The dominant native trees are baldcypress, red maple, yellow-poplar, sweetgum, American sycamore, ash, hickory, black tupelo, American elm, water oak, willow oak, white oak, southern red oak, beech, and river birch. The understory species are mainly dogwood, sourwood, sassafras, waxmyrtle, and American holly. There are no significant limitations for woodland use and management. Capability subclass IIw; woodland group 1o.

Co—Coxville sandy loam. This nearly level, poorly drained soil is in broad, smooth interstream areas and in shallow depressions in uplands. The mapped areas are 4 to about 30 acres in size.

Typically, the surface layer is dark gray sandy loam 7 inches thick. The subsoil is 62 inches thick. It is light brownish gray sandy clay loam in the upper part, gray sandy clay in the middle part, and gray clay in the lower part. The underlying material to a depth of 85 inches is light gray sandy clay.

Included with this soil in mapping are small areas of Grantham and Rains soils.

The organic matter content of the surface layer is medium. Permeability is moderately slow, the available water capacity is high, and shrink-swell potential is moderate. The subsoil is strongly acid or very strongly acid. The seasonal high water table is at or near the surface.

Most of the soil is in woodland. The rest is mainly in pasture or is cultivated.

If drained, this soil has high potential for corn, soybeans, and small grain. There is low potential for tobacco, cotton, and peanuts. Wetness is the main limitation. Minimum tillage, cover crops, and the inclusion of grasses and legumes in the conservation cropping system help maintain tilth and production. Tillage can be delayed in spring because of wetness. Lack of suitable outlets and moderately slow permeability are limitations to the installation of drainage systems. The potential for pasture forages, such as fescue and ladino clover, is high.

The potential for most urban and recreational uses is low because of wetness, permeability, and low strength.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, pond pine, white oak, red maple, hickory, sweetgum, swamp tupelo, elm, water oak, and willow oak. The understory species are mainly eastern redcedar, American holly, sweetbay, sourwood, reeds, waxmyrtle, sassafras, and blueberry. Wetness is the main limitation for woodland use and management. Capability subclass IIIw; woodland group 2w.

DgA—Dogue fine sandy loam, 0 to 3 percent slopes. This moderately well drained soil is on smooth to slightly rounded, low ridges, on flats, and in shallow depressions in stream terraces. The mapped areas are 4 to more than 100 acres in size.

Typically, the surface layer is brown fine sandy loam 7 inches thick. The subsoil is 59 inches thick. It is brownish yellow and gray clay in the upper part and light gray sandy clay loam in the lower part. The underlying material extends to a depth of 80 inches or more. It is light gray sandy loam.

Included with this soil in mapping are a few areas of soils in which silt content between depths of 10 and 40 inches is more than 30 percent. Also included are a few small areas of Altavista, State, and Wahee soils. A few low-lying areas that are subject to flooding are also included.

The organic matter content of the surface layer is low. Permeability is moderately slow, available water capacity is medium, and shrink-swell potential is moderate. The subsoil is dominantly strongly acid or very strongly acid but ranges to extremely acid. The seasonal high water table is 2 to 3 feet below the surface.

About half of the acreage of this soil is cultivated. The rest is mainly pasture and woodland.

This soil has high potential for corn, soybeans, peanuts, tobacco, cotton, and small grain. Winter cover crops, minimum tillage, and crop residue management help maintain tilth and production. Conservation practices such as no-till planting, field borders, and crop rotations that include close-growing crops help conserve soil and water. Moderately slow permeability of the subsoil is a limitation to the installation of drainage systems. The potential for pasture forages is high.

The potential for most urban uses is low because of wetness, permeability, and low strength. The potential for recreational uses is high to medium.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are black tupelo, elm, yellow-poplar, sweetgum, hickory, red maple, American beech, willow oak, white oak, post oak, southern red oak, water oak, and loblolly pine. The understory species are mainly dogwood, sweetbay, sourwood, American holly, waxmyrtle, and sassafras. Wetness is the main limitation for woodland use and management. Capability subclass IIw; woodland group 2w.

DpA—Duplin sandy loam, 0 to 2 percent slopes. This moderately well drained soil is on smooth, low ridges, flats, and shallow depressions in uplands. The mapped areas are 4 to 30 acres in size.

Typically, the surface layer is yellowish brown sandy loam 5 inches thick. The subsoil extends to a depth of 90 inches or more. It is brownish yellow clay loam in the upper part and yellowish brown, light yellowish brown, and gray clay in the lower part.

Included with this soil in mapping are some small areas of Exum, Goldsboro, and Marlboro soils.

The organic matter content of the surface layer is low. Permeability is moderately slow, available water capacity is medium, and shrink-swell potential is moderate. The subsoil is strongly acid or very strongly acid. The seasonal high water table is 2 to 3.5 feet below the surface.

Most of the acreage of this soil is cultivated. The rest is in woodland and pasture.

This soil has high potential for corn, soybeans, peanuts, tobacco, cotton, and small grain. Winter cover crops, minimum tillage, and crop residue management help maintain tilth and production. Conservation practices such as no-till planting, field borders, and crop rotations that include close-growing crops help conserve soil and water. Moderately slow permeability of the subsoil is a limitation to the installation of drainage systems. The potential for pasture forages is high.

The potential for most urban uses is medium to low because of wetness, permeability, shrink-swell potential, and low strength. The potential for recreational uses is medium to high.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are black tupelo, elm, yellow-poplar, sweetgum, hickory, red maple, willow oak, white oak, post oak, southern red oak, water oak, and loblolly pine. The understory species are mainly dogwood, sweetbay, sourwood, American holly, waxmyrtle, and sassafras. Wetness is the main limitation for woodland use and management. Capability subclass IIw; woodland group 2w.

DpB—Duplin sandy loam, 2 to 5 percent slopes. This moderately well drained soil is on ridges on uplands. The mapped areas are 4 to 100 acres in size.

Typically, the surface layer is brown sandy loam 5 inches thick. The subsoil extends to a depth of 90 inches or more. It is brownish yellow clay loam in the upper part and yellowish brown, light yellowish brown, and gray clay in the lower part.

Included with this soil in mapping are a few areas of Aycock, Marlboro, and Norfolk soils. Also included are a few areas of soils that are eroded and that have a clay loam surface layer. Some small areas of soils that have a thinner solum or less clay in the lower part of the subsoil than normal for the Duplin soils are also included.

The organic matter content of the surface layer is low. Permeability is moderately slow, available water capacity is medium, and shrink-swell potential is moderate. The subsoil is strongly acid or very strongly acid. The seasonal high water table is 2 to 3.5 feet below the surface.

Most of the acreage of this soil is cultivated. The rest is in woodland and pasture.

This soil has high to medium potential for corn, soybeans, peanuts, tobacco, cotton, and small grain. Slope, runoff, erosion, and tilth are the main limitations. Minimum tillage and crop residue management help control runoff and erosion and maintain tilth. Conservation practices such as maintaining drainageways in sod, terraces and diversions, stripcropping, field borders, and crop rotations that include close-growing crops help conserve soil and water. There is high potential for pasture forages.

This soil has medium to low potential for most urban uses because of wetness, permeability, shrink-swell potential, and low strength. The potential for recreational uses is medium to high.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are black tupelo, elm, yellow-poplar, sweetgum, hickory, red maple, willow oak, white oak, post oak, southern red oak, water oak, and loblolly pine. The understory species are mainly dogwood, sweetbay, sourwood, American holly, waxmyrtle, and sassafras. Wetness is the main limitation for woodland use and management. Capability subclass IIe; woodland group 2w.

DuB—Duplin-Urban land complex, 0 to 5 percent slopes. This map unit consists of Duplin soils and Urban land in areas too intricately mixed to be mapped separately at the scale used. The complex is about 50 to 60 percent Duplin soils and 30 to 40 percent Urban land.

The moderately well drained Duplin soils are smooth to gently sloping and are near the edges of upland divides. Typically, the surface layer is brown sandy loam 5 inches thick. The subsoil to a depth of 90 inches is brownish yellow clay loam in the upper part and yellowish brown, light yellowish brown, and gray clay in the lower part.

The Urban land part of this unit consists of impervious areas covered by streets, parking lots, buildings, and other manmade structures. Slope is generally modified to fit the needs. The extent of site modification varies greatly; many areas have been disturbed little, while many areas have been cut down or filled over.

Included in mapping are small areas in which the original soil has been cut, filled, graded, or otherwise changed to the extent that the soil series cannot be recognized. Even though many of the natural soil properties have been changed, soil texture is generally similar to that of the adjacent soils.

This map unit is not assigned to a capability subclass or a woodland group.

ExA—Exum very fine sandy loam, 0 to 2 percent slopes. This moderately well drained soil is on smooth, low ridges and flats and in shallow depressions in uplands. The mapped areas are 4 to more than 100 acres in size.

Typically, the surface layer is grayish brown very fine sandy loam 7 inches thick. The subsurface layer is light yellowish brown very fine sandy loam 7 inches thick. The subsoil extends to a depth of 91 inches or more. It is brownish yellow loam and clay loam in the upper part and mottled light gray, brownish yellow, and red clay loam in the lower part.

Included with this soil in mapping are a few small areas of soils that have a fine sandy loam surface layer. Also included are a few areas of Aycock, Goldsboro, and Nahunta soils.

The organic matter content of the surface layer is low. Permeability is moderate, available water capacity is high, and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is 2 to 3 feet below the surface.

Most of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

This soil has high potential for the production of corn, soybeans, peanuts, tobacco, cotton, and small grain. Wetness is the main limitation. Winter cover crops, minimum tillage, and crop residue management help maintain tilth and production. Conservation practices such as no-till planting, field borders, and crop rotations that include close-growing crops help conserve soil and water. Artificial drainage is generally required to prevent tobacco from drowning during wet seasons. The potential for pasture forages is high.

The potential is medium for most urban uses because of wetness and low strength. The potential for most recreational uses is high.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are black tupelo, elm, yellow-poplar, sweetgum, hickory, red maple, willow oak, white oak, post oak, southern red oak, water oak, and loblolly pine. The understory species are mainly dogwood, sweetbay, sourwood, American holly, waxmyrtle, and sassafras. Wetness is the main limitation for woodland use and management. Capability subclass IIw; woodland group 2w.

Fo—Foreston loamy sand, 0 to 2 percent slopes. This moderately well drained soil is on smooth, low ridges, and flats, and in shallow depressions in uplands. The mapped areas are 4 to 50 acres in size.

Typically, the surface layer is dark grayish brown loamy sand 7 inches thick. The subsurface layer is brownish yellow loamy sand 4 inches thick. The subsoil is 55 inches thick. It is brownish yellow sandy loam in the upper part, light yellowish brown sandy loam and loamy sand in the middle part, and light brownish gray loamy sand in the lower part. The underlying material to a depth of 72 inches is light gray loamy sand.

Included with this soil in mapping are a few small areas of Goldsboro, Lynchburg, and Pactolus soils.

The organic matter content in the surface layer is low. Permeability is moderately rapid, available water capacity is medium, and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is 2 to 3 feet below the surface.

Most of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

This soil has high potential for corn, soybeans, peanuts, tobacco, cotton, and small grain. Wetness is the main limitation. Winter cover crops, minimum tillage, and crop residue management help maintain tilth and production. Conservation practices such as no-till planting, field borders, and crop rotations that include close-growing crops help conserve soil and water. Artificial drainage is generally required to prevent tobacco from drowning during wet seasons. The potential for pasture forages is high.

The potential is medium for most urban uses because of wetness. The potential for recreational uses is medium because of the sandy surface layer.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are black tupelo, elm, yellow-poplar, sweetgum, hickory, red maple, American beech, willow oak, white oak, post oak, southern red oak, water oak, and loblolly pine. The understory species are mainly dogwood, sweetbay, sourwood, American holly, waxmyrtle, and sassafras. Wetness is the main limitation for woodland use and management. Capability subclass IIw; woodland group 2w.

GoA—Goldsboro fine sandy loam, 0 to 2 percent slopes. This moderately well drained soil is on smooth, low ridges and flats, and in shallow depressions in uplands. The mapped areas are 4 to 100 acres in size.

Typically, the surface layer is dark grayish brown fine sandy loam 7 inches thick. The subsurface layer is light yellowish brown fine sandy loam 5 inches thick. The subsoil extends to a depth of 82 inches. It is brownish yellow fine sandy loam in the upper part; brownish yellow sandy clay loam and mottled gray, brownish yellow, strong brown, and yellowish red sandy clay loam in the middle part; and gray sandy clay loam in the lower part.

Included with this soil in mapping are a few small areas of Duplin, Exum, Foreston, Lynchburg, and Norfolk soils. Also included are a few small areas of soils that have slopes greater than 2 percent.

The organic matter content in the surface layer is low. Permeability is moderate, available water capacity is medium, and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is 2 to 3 feet below the surface.

Most of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

This soil has high potential for corn (fig. 8), soybeans, peanuts, tobacco, cotton, and small grain. Wetness is the main limitation. Winter cover crops, minimum tillage, and crop residue management help maintain tilth and production. Conservation practices such as no-till planting, field borders, and crop rotations that include close-growing crops help conserve soil and water. Artificial drainage is generally required to prevent tobacco from drowning during wet seasons. The potential for pasture forages is high.

The potential is medium for most urban uses because of wetness. The potential for recreational uses is high.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are black tupelo, elm, yellow-poplar, sweetgum, hickory, red maple, American beech, willow oak, white oak, post oak, southern red oak, water oak, and loblolly pine. The understory species are mainly dogwood, sweetbay, sourwood, American holly, waxmyrtle, and sassafras. Wetness is the main limitation for woodland use and management. Capability subclass IIw; woodland group 2w.

GpA—Goldsboro-Urban land complex, 0 to 2 percent slopes. This map unit consists of Goldsboro soils and Urban land in areas too intricately mixed to be mapped separately at the scale used. The complex is about 50 percent Goldsboro soils and about 30 to 40 percent Urban land.

The moderately well drained Goldsboro soils are in broad, smooth areas on uplands. Typically, the surface layer is dark grayish brown fine sandy loam 7 inches thick. The subsurface layer is light yellowish brown fine sandy loam 5 inches thick. The subsoil extends to a depth of 82 inches. It is brownish yellow fine sandy loam in the upper part; brownish yellow sandy clay loam and mottled gray, brownish yellow, strong brown, and yellowish red sandy clay loam in the middle part; and gray sandy clay loam in the lower part.

The Urban land part of this unit consists of impervious areas covered by streets, parking lots, buildings, and other manmade structures. Slope is generally modified for construction. The extent of site modification varies greatly; many areas have been disturbed little; many areas have been cut or filled.

Included in mapping are small areas in which the original soil has been cut, filled, graded, or otherwise changed to the extent that the soil series cannot be recognized. Even though many of the natural soil properties have been changed, soil texture is generally similar to that of the adjacent soils. Also included are small areas of Altavista, Exum, and Pactolus soils.

This map unit is not assigned to a capability subclass or a woodland group.

Gr—Grantham very fine sandy loam. This nearly level, poorly drained soil is in broad interstream areas and shallow depressions in uplands. The mapped areas are 4 to 100 acres in size.

Typically, the surface layer is dark gray very fine sandy loam 6 inches thick. The subsurface layer is light brownish gray very fine sandy loam 5 inches thick. The subsoil is 84 inches thick. It is gray loam in the upper part and gray clay loam in the lower part. The underlying material to a depth of 99 inches is light gray loam.

Included with this soil in mapping are a few small areas of Nahunta and Rains soils.

The organic matter content in the surface layer is medium. Permeability is moderately slow, the available water capacity is high, and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is at or near the surface.

About half of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

If drained, this soil has high potential for corn, soybeans, and small grain. There is low potential for tobacco, cotton, and peanuts. Wetness is the main limitation. Minimum tillage, cover crops, and the inclusion of grasses and legumes in the conservation cropping system help maintain tilth and production. Tillage can be delayed in spring because of wetness. Lack of suitable outlets and moderately slow permeability are limitations to the installation of drainage systems. The potential for pasture forages, such as fescue and ladino clover, is high.

The potential for most urban and recreational uses is low because of wetness and permeability.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, pond pine, white oak, red maple, hickory, sweetgum, swamp tupelo, elm, water oak, and willow oak. The understory species are mainly cedar, American

holly, sweetbay, sourwood, reeds, waxmyrtle, sassafras, and blueberry. Wetness is the main limitation for woodland use and management. Capability subclass IIIw; woodland group 2w.

Gt—Grantham-Urban land complex. This map unit consists of the nearly level Grantham soils and Urban land in areas too intricately mixed to be mapped separately at the scale used. The complex is about 30 percent Grantham soils and 30 to 35 percent Urban land.

The poorly drained Grantham soils are on broad flats and in shallow depressions in uplands. Typically, the surface layer is dark gray very fine sandy loam 6 inches thick. The subsurface layer is light brownish gray very fine sandy loam 5 inches thick. The subsoil is 84 inches thick. It is gray loam in the upper part and gray clay loam in the lower part. The underlying material to a depth of 99 inches is light gray loam.

The Urban land part of this unit consists of impervious areas covered by streets, parking lots, buildings, and other manmade structures. Slope is generally modified to fit the needs. The extent of site modification varies greatly; many areas have been disturbed little, while many areas have been cut down or filled over.

Included in mapping are small areas in which the original soil has been cut, filled, graded, or otherwise changed to the extent that the soil series cannot be recognized. Even though many of the natural soil properties are changed, soil texture is generally similar to that of the adjacent soils. Also included are small areas of Coxville, Lynchburg, Nahunta, Rains, and Roanoke soils.

This map unit is not assigned to a capability subclass or a woodland group.

GyC—Gritney fine sandy loam, 6 to 10 percent slopes. This well drained soil is on side slopes on uplands. The mapped areas are 4 to 30 acres in size.

Typically, the surface layer is brown fine sandy loam 5 inches thick. The subsoil is 45 inches thick. It is reddish yellow and brownish yellow clay in the upper part and mottled yellowish red, strong brown, gray, reddish gray, red, weak red, and yellowish brown clay in the lower part. The underlying material to a depth of 60 inches is mottled red, gray, weak red, and yellow sandy clay loam.

Included with this soil in mapping are a few small areas of Norfolk and Wagram soils. Also included are small areas of soils that have a solum less than 40 inches thick.

The organic matter content in the surface layer is low. Permeability is slow, available water capacity is medium, and shrink-swell potential is high. The subsoil is strongly acid or very strongly acid. The seasonal high water table is below a depth of 6 feet.

Most of the acreage of this soil is in woodland. The rest is in pasture or is cultivated.

This soil has medium potential for corn, soybeans, and small grain. Slope, runoff, erosion, and tilth are the main limitations. Minimum tillage and crop residue management help control runoff and erosion and maintain tilth. Conservation practices such as maintaining drainageways in sod, terraces and diversions, contour stripcropping, contour farming, field borders, and crop rotations that include close-growing crops also help conserve soil and water. The potential for growing pasture forages is medium. Proper pasture management helps maintain adequate protective cover by reducing runoff and controlling erosion.

The potential for most urban uses is low because of slope, permeability, shrink-swell potential, and low strength. The potential is high for paths and trails, low for playgrounds because of slope, and medium for most other uses because of slope and permeability.

This soil has moderately high potential for broadleaved and needle-leaved trees. The dominant trees are yellow-poplar, white oak, red maple, post oak, southern red oak, water oak, sweetgum, hickory, American sycamore, elm, ash, loblolly pine, and beech. The understory species are mainly dogwood, sourwood, waxmyrtle, holly, and sassafras. There are no significant limitations for woodland use and management. Capability subclass IVe; woodland group 3o.

GyD—Gritney fine sandy loam, 10 to 15 percent slopes. This well drained soil is on side slopes on uplands. The mapped areas are 4 to 30 acres in size.

Typically, the surface layer is brown fine sandy loam 5 inches thick. The subsoil is 45 inches thick. It is reddish yellow and brownish yellow clay in the upper part and mottled yellowish red, strong brown, gray, reddish gray, red, weak red, and yellowish brown clay in the lower part. The underlying material to a depth of 60 inches is mottled red, gray, weak red, and yellow sandy clay loam.

Included with this soil in mapping are small areas of soils that have a solum thinner than 40 inches and small areas of soils that have slopes greater than 15 percent. Also included are small areas of Wagram soils.

The organic matter content in the surface layer is low. Permeability is slow, available water capacity is medium, and shrink-swell potential is high. The subsoil is strongly acid or very strongly acid. The seasonal high water table is below a depth of 6 feet.

Most of this soil is in woodland. Only a small acreage is cultivated or in pasture.

This soil has low potential for cultivated crops because of slope, runoff, erosion, and poor tilth. The potential for pasture forages is medium. Proper pasture management helps maintain adequate protective cover by reducing runoff and controlling erosion.

The potential for most urban uses is low because of slope, permeability, shrink-swell potential, and low strength. The potential is high for paths and trails, low

for playgrounds because of slope, and medium for most other uses because of slope and permeability.

This soil has moderately high potential for broad-leaved and needle-leaved trees. The dominant trees are yellow-poplar, white oak, red maple, post oak, southern red oak, water oak, sweetgum, hickory, American sycamore, elm, ash, loblolly pine, and beech. The understory species are mainly dogwood, sourwood, waxmyrtle, holly, and sassafras. There are no significant limitations for woodland use and management. Capability subclass VIe; woodland group 3o.

Jo—Johns fine sandy loam. This nearly level, somewhat poorly drained to moderately well drained soil is on smooth, low ridges and in shallow depressions in stream terraces. The mapped areas are 4 to about 30 acres in size.

Typically, the surface layer is grayish brown fine sandy loam 8 inches thick. The subsurface layer is light yellowish brown fine sandy loam 5 inches thick. The subsoil is 21 inches thick. It is yellowish brown and light yellowish brown sandy clay loam in the upper part and light yellowish brown sandy loam in the lower part. The underlying material to a depth of 70 inches is light yellowish brown loamy sand and loamy coarse sand.

Included with this soil in mapping are a few small areas of soils that have a solum thicker than 40 inches. Also included are a few small areas of Lumbee and Pactolus soils.

The organic matter content in the surface layer is low. Permeability is moderate, the available water capacity is medium, and the shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is 1.5 to 3 feet below the surface.

About half of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

If drained, this soil has high potential for corn, soybeans, peanuts, tobacco, cotton, and small grain. Winter cover crops, minimum tillage, and crop residue management help maintain tilth and production. Conservation practices such as no-till planting, field borders, and crop rotations that include close-growing crops help conserve soil and water. Artificial drainage is generally required to prevent tobacco from drowning during wet seasons. The potential for pasture forages is high.

The potential for most urban uses is low because of wetness. The potential for most recreational uses is medium because of wetness.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are black tupelo, elm, yellow-poplar, sweetgum, hickory, red maple, American beech, willow oak, white oak, post oak, southern red oak, water oak, and loblolly pine. The understory species are mainly dogwood, sweetbay, sourwood, American holly, waxmyrtle, and sassafras. Wetness is the main limitation for woodland use and management. Capability subclass IIw; woodland group 2w.

JS—Johnston soils. These nearly level, very poorly drained soils are on narrow to moderately broad flood plains. The mapped areas are 10 to more than 100 acres in size. In this map unit, the texture of the surface layer is more variable than it is in most other map units; and areas of this map unit are generally larger than those of most other map units. Mapping has been controlled well enough, however, to make interpretations for the anticipated uses of the soils.

Typically, the surface layer is black mucky loam 29 inches thick. Below this layer is dark gray fine sandy loam 11 inches thick. The underlying material to a depth of 60 inches is light brownish gray loamy sand.

Included with these soils in mapping are a few areas of Bibb soils. Also included are a few small areas of soils that have a black or very dark gray surface layer less than 24 inches thick.

The organic matter content in the surface layer is high. Permeability is moderately rapid in the surface layer and rapid below, the available water capacity is high, and shrink-swell potential is low. These soils are strongly acid or very strongly acid. The seasonal high water table is at or near the surface. These soils are frequently flooded for long periods.

Most of the acreage of these soils is in woodland. A small acreage is in pasture.

These soils have low potential for crop production. Flooding and wetness are the main limitations. Lack of suitable outlets is a limitation to the installation of drainage systems. The potential is high for pasture forages, such as fescue and ladino clover, where the soil is drained and protected from flooding.

The potential for most urban and recreational uses is low because of flooding and wetness.

These soils have very high potential for broad-leaved trees. The dominant native trees are baldcypress, pond pine, red maple, green ash, hickory, sweetgum, water tupelo, elm, yellow-poplar, river birch, water oak, willow oak, and swamp white oak. The understory species are mainly cedar, American holly, sweetbay, sourwood, reeds, and waxmyrtle. Wetness and flooding are the main limitations for woodland use and management. Capability subclass IVw; woodland group 1w.

KeB—Kenansville loamy sand, 0 to 4 percent slopes. This well drained soil is on smooth to slightly rounded, low ridges on stream terraces. The mapped areas are 4 to 50 acres in size.

Typically, the surface layer is dark grayish brown loamy sand 8 inches thick. The subsurface layer is light yellowish brown loamy sand 17 inches thick. The subsoil is 23 inches thick. It is strong brown sandy loam in the upper part and brownish yellow loamy sand in the lower part. The underlying material extends to a depth of 90 inches or more. It is brownish yellow loamy sand in the upper part and white sand in the lower part.

Included with this soil in mapping are a few small areas of soils that have a surface layer thinner than 20 inches and some small areas of soils that have a loamy sand or sandy clay loam subsoil. Also included are a few small areas of Tarboro soils. A few low-lying areas of soils that are subject to flooding are also included.

The organic matter content in the surface layer is very low. Permeability is moderately rapid, available water capacity is low, and shrink-swell potential is low. The subsoil is dominantly strongly acid or very strongly acid but ranges to medium acid. The seasonal high water table is below a depth of 6 feet.

About half of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

This soil has medium to high potential for corn, soybeans, peanuts, tobacco, and small grain. Leaching of plant nutrients, soil blowing, and available water capacity are the main limitations. Blowing sand can damage young plants. Winter cover crops, minimum tillage, and crop residue management help maintain organic matter content and conserve moisture. Conservation practices such as no-till planting, windbreaks, and crop rotations that include close-growing crops help conserve soil and water. Fertilizers, particularly nitrogen, should be added in split applications. There is high potential for pasture forages such as Coastal bermudagrass and bahiagrass.

The potential for most urban uses is high. The potential for recreational uses is medium because of the sandy surface layer.

This soil has moderately high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, longleaf pine, red maple, hickory, sweetgum, black tupelo, American beech, southern red oak, white oak, and post oak. The understory species are mainly dogwood, sassafras, American holly, sourwood, and waxmyrtle. Low available water capacity is the main limitation in woodland use and management. Capability subclass IIs; woodland group 3s.

Lu—Lumbee fine sandy loam. This nearly level, poorly drained soil is on broad, smooth flats and in shallow depressions in stream terraces. The mapped areas are 4 to 100 acres in size.

Typically, the surface layer is dark grayish brown fine sandy loam 8 inches thick. The subsurface layer is light gray fine sandy loam 4 inches thick. The subsoil is 21 inches thick. It is gray sandy clay loam in the upper part and light gray sandy loam in the lower part. The underlying material to a depth of 60 inches is white sand and white coarse sand.

Included with this soil in mapping are a few small areas of soils that have a solum thicker than 40 inches or clay content of more than 35 percent between depths of 10 and 40 inches. Also included are a few small areas of Bibb and Johns soils and poorly drained soils that have sandy textures throughout.

The organic matter content in the surface layer is medium. Permeability is moderate, the available water capacity is medium, and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is at or near the surface. These soils are rarely flooded.

Most of the acreage of this soil is in woodland. The rest is in pasture and or is cultivated.

If drained and protected from flooding, this soil has high potential for corn, soybeans, and small grain. There is low potential for tobacco, cotton, and peanuts. Wetness and flooding are the main limitations. Minimum tillage, cover crops, and the inclusion of grasses and legumes in the conservation cropping system help maintain tilth and production. Tillage can be delayed in spring because of wetness. Lack of suitable outlets is a limitation to the installation of drainage systems. The potential for pasture forages, such as fescue and ladino clover, is high.

The potential for most urban and recreational uses is low because of flooding and wetness.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are baldcypress, pond pine, red maple, green ash, hickory, sweetgum, swamp tupelo, elm, yellow-poplar, river birch, water oak, willow oak, and swamp white oak. The understory species are mainly eastern redcedar, American holly, sweetbay, sourwood, reeds, and waxmyrtle. Wetness is the main limitation for woodland use and management. Capability subclass IIIw; woodland group 2w.

Ly—Lynchburg fine sandy loam. This nearly level, somewhat poorly drained soil is in broad, smooth interstream areas and in shallow depressions in uplands. The mapped areas are 4 to 50 acres in size.

Typically, the surface layer is dark grayish brown fine sandy loam 7 inches thick. The subsoil is 69 inches thick. It is light yellowish brown and gray sandy clay loam. The underlying material to a depth of 85 inches is gray sandy clay loam.

Included with this soil in mapping are a few areas of soils that have a sandy surface layer thicker than 20 inches. Also included are a few small areas of Foreston, Goldsboro, Nahunta, and Rains soils.

The organic matter content in the surface layer is low. Permeability is moderate, the available water capacity is medium, and shrink-swell potential is low. The subsoil is dominantly strongly acid or very strongly acid but ranges to extremely acid. The seasonal high water table is at a depth of 0.5 foot to 1.5 feet.

Most of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

If drained, this soil has high potential for corn, soybeans, peanuts, tobacco, cotton, and small grain. Wetness is the main limitation. Winter cover crops, minimum tillage, and crop residue management help maintain tilth and production. Conservation practices such as no-till

planting, field borders, and crop rotations that include close-growing crops help conserve soil and water. Artificial drainage is generally required to prevent tobacco from drowning during wet seasons. The potential for pasture forages is high.

The potential is low for most urban uses because of wetness. The recreational potential is medium to low because of wetness.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are black tupelo, elm, yellow-poplar, sweetgum, hickory, red maple, American beech, willow oak, white oak, post oak, southern red oak, water oak, and loblolly pine. The understory species are mainly dogwood, sweetbay, sourwood, American holly, waxmyrtle, and sassafras. Wetness is the main limitation for woodland use and management. Capability subclass IIw; woodland group 2w.

MaA—Marlboro sandy loam, 0 to 2 percent slopes. This well drained soil is in broad, smooth areas of the uplands. The mapped areas are 4 to 40 acres in size.

Typically, the surface layer is grayish brown sandy loam 8 inches thick. The subsurface layer is light yellowish brown sandy loam 2 inches thick. The subsoil extends to a depth of 71 inches or more. It is brownish yellow sandy clay loam in the upper part; yellowish brown sandy clay, yellowish brown clay, and brownish yellow clay in the middle part; and mottled brownish yellow, reddish yellow, red, light gray, and very pale brown sandy clay in the lower part.

Included with this soil in mapping are some small areas of soils that are sandy clay loam in the lower part of the subsoil. Also included are a few small areas of Aycock and Norfolk soils.

The organic matter content of the surface layer is low. Permeability is moderate, available water capacity is medium, and shrink-swell potential is low. The subsoil is dominantly strongly acid or very strongly acid but ranges to slightly acid. The seasonal high water table is below a depth of 6 feet.

Most of the acreage of this soil is cultivated. The rest is in woodland and pasture.

The potential is high for corn, soybeans, peanuts, tobacco, cotton, and small grain. There are no major limitations for cropland. Winter cover crops, minimum tillage, and crop residue management help maintain tilth and moisture content. Conservation practices such as no-till planting, field borders, and crop rotations that include close-growing crops help conserve soil and water. The potential for pasture forages is high.

The potential for most urban uses is high to medium. Permeability influences the performance of septic tank absorption fields, but this limitation generally can be overcome by modifying the field or by increasing the size of the absorption area. Low strength affects design and construction of roads. The recreational potential is high.

This soil has moderately high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, red maple, hickory, yellow-poplar, black tupelo, American elm, American beech, southern red oak, water oak, and white oak. The understory species are mainly dogwood, sassafras, sourwood, and waxmyrtle. There are no major limitations for woodland use and management. Capability class I; woodland group 3o.

MaB—Marlboro sandy loam, 2 to 6 percent slopes. This well drained soil is on slightly rounded parts of the uplands. The mapped areas are 4 to 50 acres in size.

Typically, the surface layer is grayish brown sandy loam 8 inches thick. The subsurface layer is light yellowish brown sandy loam 2 inches thick. The subsoil extends to a depth of 71 inches or more. It is brownish yellow sandy clay loam in the upper part; yellowish brown sandy clay, yellowish brown clay, and brownish yellow clay in the middle part; and mottled brownish yellow, reddish yellow, red, light gray, and very pale brown sandy clay in the lower part.

Included with this soil in mapping are some small areas of soils that have a solum thinner than 60 inches or that are sandy clay loam in the lower part of the subsoil. Also included are a few areas of eroded soils and some small areas of Aycock, Duplin, and Norfolk soils.

The organic matter content of the surface layer is low. Permeability is moderate, available water capacity is medium, and shrink-swell potential is low. The subsoil is dominantly strongly acid or very strongly acid but ranges to slightly acid. The seasonal high water table is below a depth of 6 feet.

Most of the acreage of this soil is cultivated. The rest is in woodland and pasture.

The potential is high for corn, soybeans, peanuts, tobacco, cotton, and small grain. Slope, runoff, and susceptibility to erosion are the main limitations. Winter cover crops, minimum tillage, and crop residue management help control runoff and erosion and maintain tilth and organic matter content. Conservation practices such as contour stripcropping, no-till planting, field borders, and crop rotations that include close-growing crops also help conserve soil and water. The potential for pasture forages is high.

The potential for most urban uses is high. Permeability influences the performance of septic tank absorption fields, but this limitation generally can be overcome by modifying the field or by increasing the size of the absorption area. Low strength affects design and construction of roads. The recreational potential is high for most uses. The potential for playgrounds is medium because of slope.

This soil has moderately high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, red maple, hickory, yellow-poplar,

black tupelo, American elm, American beech, southern red oak, water oak, and white oak. The understory species are mainly dogwood, sassafras, sourwood, and waxmyrtle. There are no major limitations for woodland use and management. Capability subclass IIe; woodland group 3o.

Me—Meggett loam. This nearly level, poorly drained soil is on flood plains. The mapped areas are 50 to more than 100 acres in size.

Typically, the surface layer is dark grayish brown loam 5 inches thick. The subsoil is 49 inches thick. It is gray clay loam in the upper part and greenish gray clay in the lower part. The underlying material to a depth of 70 inches is greenish gray clay and gray sandy clay loam.

Included with this soil in mapping are a few areas of Roanoke and Wehadkee soils.

The organic matter content in the surface layer is medium. Permeability is slow, the available water capacity is high, and shrink-swell potential is high. The subsoil is medium acid to moderately alkaline. The seasonal high water table is at or near the surface. Areas of this soil are commonly flooded for brief periods.

Most of the acreage of this soil is in woodland. The rest is mainly in pasture or is cultivated.

This soil has low potential for crop production. Flooding and wetness are the main limitations. The potential for pasture forages, such as fescue and ladino clover, is high if the soil is drained and protected from flooding. Lack of suitable outlets and slow permeability of the subsoil are limitations to the installation of drainage systems.

The potential for urban and recreational uses is low because of flooding, wetness, low strength, and shrink-swell potential.

This soil has very high potential for broad-leaved trees. The dominant native trees are baldcypress, red maple, ash, hickory, sweetgum, black tupelo, elm, yellow-poplar, river birch, water oak, willow oak, and swamp white oak. The understory species are mainly cedar, American holly, sweetbay, sourwood, reeds, and waxmyrtle. Wetness is the main limitation for woodland use and management. Capability subclass VIw; woodland group 1w.

Na—Nahunta very fine sandy loam. This nearly level, somewhat poorly drained soil is in broad, smooth interstream areas and in shallow depressions in uplands. The mapped areas are 4 to 40 acres in size.

Typically, the surface layer is very dark gray very fine sandy loam 5 inches thick. The subsurface layer is pale brown very fine sandy loam 4 inches thick. The subsoil is 58 inches thick. It is pale brown very fine sandy loam in the upper part and gray loam in the lower part. The underlying material to a depth of 99 inches is light gray loam.

Included with this soil in mapping are a few small areas of soils in which clay content is less than 18 percent between depths of 10 to 40 inches. Also included are a few small areas of Exum, Grantham, and Lynchburg soils.

The organic matter content in the surface layer is low. Permeability is moderate, the available water capacity is high, and shrink-swell potential is low. The subsoil is dominantly strongly acid or very strongly acid but ranges to extremely acid. The seasonal high water table is 1 to 2 feet below the surface.

Most of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

If drained, this soil has high potential for corn, soybeans, peanuts, tobacco, cotton, and small grain. Wetness is the main limitation. Winter cover crops, minimum tillage, and crop residue management help maintain tilth and production. Conservation practices such as no-till planting, field borders, and crop rotations that include close-growing crops also help conserve soil and water. Artificial drainage is generally required to prevent tobacco from drowning during wet seasons. The potential for pasture forages is high.

The potential is low for most urban uses because of wetness and low strength. The recreational potential is medium because of wetness.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are black tupelo, elm, yellow-poplar, sweetgum, hickory, red maple, American beech, willow oak, white oak, post oak, southern red oak, water oak, and loblolly pine. The understory species are mainly dogwood, sweetbay, sourwood, American holly, waxmyrtle, and sassafras. Wetness is the main limitation for woodland use and management. Capability subclass IIw; woodland group 2w.

NoA—Norfolk loamy sand, 0 to 2 percent slopes. This well drained soil is in broad, smooth areas on uplands. The mapped areas are 4 to 100 acres in size.

Typically, the surface layer is brown loamy sand 7 inches thick. The subsurface layer is light yellowish brown loamy sand 5 inches thick. The subsoil is 67 inches thick. It is yellowish brown sandy clay loam in the upper part and brownish yellow sandy clay loam in the lower part. The underlying material to a depth of 90 inches is yellow sandy clay loam and coarse sandy loam.

Included with this soil in mapping are a few small areas of Aycock, Goldsboro, Marlboro, and Wagram soils.

The organic matter content of the surface layer is low. Permeability is moderate, available water capacity is medium, and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is 4 to 6 feet below the surface.

Most of the acreage of this soil is cultivated. The rest is mainly in pasture or woodland.

The potential is high for corn, soybeans, peanuts, tobacco, cotton, and small grain. There is no major limitation to the use of this soil for crops. Winter cover crops,

minimum tillage, and crop residue management help maintain tilth and organic matter content. Conservation practices such as no-till planting (fig. 9), field borders, and crop rotations that include close-growing crops help conserve soil and water. The potential for pasture forages is high.

The potential for most urban uses is high to medium. Seasonal wetness is the main limitation. The recreational potential is high to medium because of sandy material.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, red maple, hickory, yellow-poplar, black tupelo, American elm, southern red oak, water oak, and white oak. The understory species are mainly dogwood, sassafras, sourwood, and waxmyrtle. There are no major limitations for woodland use and management. Capability class I; woodland group 2o.

NoB—Norfolk loamy sand, 2 to 6 percent slopes. This well drained soil is on slightly rounded parts of low ridges and side slopes on uplands. The areas are elongated or irregularly shaped and are 4 to more than 100 acres in size.

Typically, the surface layer is brown loamy sand 7 inches thick. The subsurface layer is light yellowish brown loamy sand 5 inches thick. The subsoil is 67 inches thick. It is yellowish brown sandy clay loam in the upper part and brownish yellow sandy clay loam in the lower part. The underlying material to a depth of 90 inches is yellow sandy clay loam and coarse sandy loam.

Included with this soil in mapping are a few small areas of eroded soils that have less than 5 inches of topsoil and a few small areas of soils that have a yellowish red subsoil. Also included are a few small areas of Aycock, Duplin, Marlboro, and Wagram soils.

The organic matter content of the surface layer is low. Permeability is moderate, available water capacity is medium, and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is 4 to 6 feet below the surface.

Most of the acreage of this soil is cultivated. The rest is mainly in pasture or woodland.

The potential is high for corn, soybeans, peanuts, tobacco, cotton, and small grain. Slope, runoff, and susceptibility to erosion are the main limitations. Winter cover crops, minimum tillage, and crop residue management help control runoff and erosion and maintain tilth and organic matter content. Conservation practices such as contour stripcropping, no-till planting, field borders, and crop rotations that include close-growing crops help conserve soil and water. The potential for pasture forages is high.

The potential for most urban uses is high to medium. Seasonal wetness is the main limitation. The recreation potential is high to medium because of sandy material.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, red maple, hickory, yellow-poplar, black tupelo, American elm, southern red oak, water oak, and white oak. The understory species are mainly dogwood, sassafras, sourwood, and waxmyrtle. There are no major limitations for woodland use and management. Capability subclass IIe; woodland group 2o.

NoC—Norfolk loamy sand, 6 to 10 percent slopes. This well drained soil is on short side slopes on uplands. The mapped areas are 5 to 30 acres in size.

Typically, the surface layer is brown loamy sand 7 inches thick. The subsurface layer is light yellowish brown loamy sand 5 inches thick. The subsoil is 67 inches thick. It is yellowish brown sandy clay loam in the upper part and brownish yellow sandy clay loam in the lower part. The underlying material to a depth of 90 inches is yellow sandy clay loam and coarse sandy loam.

Included with this soil in mapping are a few areas of Gritney and Wagram soils. Also included are small areas of soils that have a solum thinner than 60 inches or less clay in the subsoil than is normal for the Norfolk series.

The organic matter content of the surface layer is low. Permeability is moderate, available water capacity is medium, and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is 4 to 6 feet below the surface.

Most of the acreage of this soil is in woodland. The rest is mainly in pasture or is cultivated.

The potential is medium for corn, soybeans, peanuts, tobacco, cotton, and small grain. Slope, runoff, and susceptibility to erosion are the main limitations. Winter cover crops, minimum tillage, and crop residue management help control runoff and erosion and maintain tilth and organic matter content. Conservation practices such as contour stripcropping, no-till planting, field borders, terraces, and crop rotations that include close-growing crops help conserve soil and water. The potential for pasture forages is high.

The potential for most urban uses is medium. Seasonal wetness and slope are the main limitations. The recreational potential for most uses is medium because of slope.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, red maple, hickory, yellow-poplar, black tupelo, American elm, southern red oak, water oak, and white oak. The understory species are mainly dogwood, sassafras, sourwood, and waxmyrtle. There are no major limitations for woodland use and management. Capability subclass IIIe; woodland group 2o.

NuB--Norfolk-Urban land complex, 0 to 6 percent slopes. This map unit consists of Norfolk soils and Urban land in areas too intricately mixed to be mapped separately at the scale used. The complex is about 30 to 40 percent Norfolk soils and about 30 to 35 percent Urban land.

The well drained Norfolk soils are in broad, slightly convex areas on uplands. Typically, the surface layer is brown loamy sand 7 inches thick. The subsurface layer is light yellowish brown loamy sand 5 inches thick. The subsoil is 67 inches thick. It is yellowish brown sandy clay loam in the upper part and brownish yellow sandy clay loam in the lower part. The underlying material to a depth of 90 inches is yellow sandy clay loam and coarse sandy loam.

The Urban land part of this unit consists of impervious areas covered by streets, parking lots, buildings, and other manmade structures. Slope is generally modified for construction. The extent of site modification varies greatly; many areas have been disturbed little; many areas have been cut or filled.

Included in mapping are small areas in which the original soil has been cut, filled, graded, or otherwise changed to the extent that the soil series cannot be recognized. Even though many of the natural soil properties are changed, soil texture is generally similar to that of the adjacent soils. Also included in mapping are small areas of Autryville, Aycock, Conetoe, Marlboro, State, Wagram, and Wickham soils.

This map unit is not assigned to a capability subclass or a woodland group.

Pa—Pactolus loamy sand. This nearly level, moderately well drained and somewhat poorly drained soil is on broad flats, in depressions, and on smooth, low ridges on uplands and stream terraces. The mapped areas are 4 to 100 acres in size.

Typically, the surface layer is dark gray loamy sand 5 inches thick. The underlying material extends to a depth of 85 inches or more. It is light yellowish brown and yellow loamy sand in the upper part; very pale brown and brownish yellow loamy sand in the middle part; and light gray loamy sand in the lower part.

Included with this soil in mapping are a few small areas of Foreston soils. Also included are small areas of soils that are subject to flooding.

The organic matter content in the surface layer is very low. Permeability is rapid, the available water capacity is low, and shrink-swell potential is low. This soil is strongly acid or very strongly acid. The seasonal high water table is 1.5 to 2.5 feet below the surface.

Most of the acreage of this soil is in woodland. The rest is mainly cultivated or in pasture.

If drained, this soil has medium potential for corn, soybeans, peanuts, tobacco, and small grain. Wetness and susceptibility to leaching are the main limitations. Low available water capacity is a limitation during dry periods. Winter cover crops, minimum tillage, and crop residue management help maintain tilth and production. Conservation practices such as no-till planting, field borders, and crop rotations that include close-growing crops help conserve soil and water. Artificial drainage is generally required to prevent tobacco from drowning during wet seasons. Fertilizers, especially nitrogen, should be added in split applications. The potential for pasture forages is high.

The potential for most urban uses is medium to low because of wetness. The potential is medium for such urban uses as dwellings without basements and roads and low for such uses as dwellings with basements and septic tank absorption fields. The potential for most recreational uses is medium because of wetness.

This soil has moderately high potential for broadleaved and needle-leaved trees. The dominant native trees are black tupelo, elm, yellow-poplar, sweetgum, hickory, red maple, American beech, willow oak, white oak, post oak, southern red oak, water oak, and loblolly pine. The understory species are mainly dogwood, sweetbay, sourwood, American holly, waxmyrtle, and sassafras. Wetness is the main limitation for woodland use and management. Capability subclass IIIs; woodland group 3w.

Pt—Pits. This map unit consists of pits from which the underlying sand, gravel, or soil material has been removed or of areas that have been excavated and used as sanitary landfills.

Most of these pits were made as a result of removal of material to be used as fill for roads and other structures and removal of sand to be used by the building trade. The depth of the pits ranges from 5 to 20 feet. Many of the pits are partially filled with water during wet periods. The newer pits support little vegetation, but many of the older ones are vegetated with native plants.

The few areas used as sanitary landfills consist of pits l0 to 20 feet in depth. These pits have been filled with refuse to within several feet of the surface. The areas that are closed have native vegetation on the surface; those that are active lack vegetation. Recommendations for reclamation and use of this unit require onsite investigation. Not placed in a capability subclass or a woodland group.

Pu—Portsmouth fine sandy loam. This nearly level, very poorly drained soil is on broad flats and in depressions in stream terraces. The mapped areas are 4 to more than 100 acres in size.

Typically, the surface layer is very dark gray fine sandy loam l6 inches thick. The subsoil is 24 inches thick. It is light brownish gray sandy clay loam in the upper part and light brownish gray sandy loam in the lower part. The underlying material to a depth of 82 inches is light brownish gray and light gray loamy sand.

Included with this soil in mapping are a few small areas of soils in which clay content in the subsoil is less than 18 percent and a few small areas of soils that have a solum 40 to 60 inches thick. Also included are a few small areas of Ballahack, Cape Fear, and Roanoke soils. A few small areas of soils that are subject to flooding are also included.

The organic matter content in the surface layer is medium. Permeability is moderate, the available water capacity is medium and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is at or near the surface.

About half of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

If drained, this soil has high potential for corn, soybeans, and small grain. There is low potential for tobacco, cotton, and peanuts. Wetness is the main limitation. Minimum tillage, cover crops, and the inclusion of grasses and legumes in the conservation cropping system help maintain tilth and production. Tillage can be delayed in spring because of wetness. Lack of suitable outlets is a limitation to the installation of drainage systems. The potential for pasture forages, such as fescue and ladino clover, is high.

Potential for most urban and recreational uses is low because of wetness.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant trees are baldcypress, pond pine, red maple, green ash, sweetgum, black tupelo, swamp tupelo, elm, yellow-poplar, river birch, water oak, and willow oak. The understory species are mainly cedar, American holly, sweetbay, sourwood, reeds, and waxmyrtle. Wetness is the main limitation for woodland use and management. Capability subclass IIIw; woodland group 2w.

Ra—Rains fine sandy loam. This nearly level, poorly drained soil is in broad, smooth interstream areas and shallow depressions in uplands. The areas are irregularly shaped and are 4 to more than 100 acres in size.

Typically, the surface layer is very dark gray fine sandy loam 7 inches thick. The subsurface layer is gray fine sandy loam 4 inches thick. The subsoil is 64 inches thick. It is gray fine sandy loam in the upper part and gray sandy clay loam in the lower part. The underlying material to a depth of 99 inches is gray sandy clay.

Included with this soil in mapping are a few small areas of Coxville, Grantham, and Lynchburg soils. Also included are some low areas that are subject to ponding.

The organic matter content in the surface layer is medium. Permeability is moderate, the available water capacity is medium and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is at or near the surface.

About half of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

If drained, this soil has high potential for corn, soybeans, and small grain. There is low potential for tobacco, cotton, and peanuts. Wetness is the main limitation. Minimum tillage, cover crops, and the inclusion of grasses and legumes in the conservation cropping system help maintain tilth and production. Tillage can be delayed in spring because of wetness. Lack of suitable outlets is a limitation to the installation of drainage systems. The potential for pasture forages, such as fescue and ladino clover, is high.

The potential for most urban and recreational uses is low because of wetness.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, pond pine, white oak, red maple, hickory, sweetgum, black tupelo, elm, water oak, and willow oak. The understory species are mainly cedar, American holly, sweetbay, sourwood, reeds, waxmyrtle, sassafras, and blueberry. Wetness is the main limitation for woodland use and management. Capability subclass IIIw; woodland group 2w.

Ro—Roanoke loam. This nearly level, poorly drained soil is on broad flats and in slightly depressional drainageways in stream terraces. The mapped areas are 4 to more than 100 acres in size.

Typically, the surface layer is dark grayish brown loam 8 inches thick. The subsoil is 44 inches thick. It is gray clay loam in the upper part, gray clay in the middle part, and gray sandy clay loam in the lower part. The underlying material to a depth of 90 inches is gray coarse sand.

Included with this soil in mapping are a few areas of soils that have a solum thinner than 40 inches or thicker than 60 inches. Also included are a few small areas of Cape Fear, Meggett, and Wahee soils.

The organic matter content in the surface layer is medium. Permeability is slow, the available water capacity is high and shrink-swell potential is moderate. The subsoil is strongly acid or very strongly acid. The seasonal high water table is at or near the surface. This soil is frequently flooded for brief periods.

About half of the acreage of this soil is in woodland. The rest is mainly in pasture or is cultivated.

If drained and protected from flooding, this soil has high potential for corn, soybeans, and small grain. There is low potential for tobacco, cotton, and peanuts. Wetness and flooding are the main limitations (fig. 10). Minimum tillage, cover crops, and the inclusion of grasses and legumes in the conservation cropping system help maintain tilth and production. Tillage can be delayed in spring because of wetness. Lack of suitable outlets and slow permeability are limitations to the installation of drainage systems. The potential for pasture forages, such as fescue and ladino clover, is high.

The potential for most urban and recreational uses is low because of flooding, wetness, permeability, and low strength.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are baldcypress, pond pine, loblolly pine, red maple, green ash, hickory, sweetgum, black tupelo, elm, river birch, water oak, and willow oak. The understory species are mainly cedar, American holly, sweetbay, sourwood, reeds, and waxmyrtle. Wetness and flooding are the

main limitations for woodland use and management. Capability subclass IIIw; woodland group 2w.

StB—State loamy sand, 0 to 4 percent slopes. This well drained soil is on smooth to slightly rounded, low ridges on stream terraces. The mapped areas are 4 to 100 acres in size.

Typically, the surface layer is brown loamy sand 8 inches thick. The subsurface layer is brown loamy sand 5 inches thick. The subsoil is 27 inches thick. It is strong brown sandy loam in the upper part, strong brown sandy clay loam in the middle part, and strong brown sandy loam in the lower part. The underlying material extends to a depth of 99 inches or more. It is brownish yellow sand in the upper part, very pale brown sand in the middle part, and white coarse sand in the lower part.

Included with this soil in mapping are a few small areas of Altavista, Conetoe, Tarboro, and Wickham soils. Also included are some small areas of soils that have sandy layers at a depth of less than 40 inches. Also included are a few low-lying areas of soils that are subject to flooding.

The organic matter content in the surface layer is low. Permeability is moderate to moderately rapid, available water capacity is medium, and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is below a depth of 6 feet.

Most of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

The potential is high for corn, soybeans, peanuts, tobacco, cotton (fig. 11), and small grain. Winter cover crops, minimum tillage, and crop residue management help control runoff and erosion and maintain tilth and organic matter content. Conservation practices such as no-till planting, field borders, and crop rotations that include close-growing crops also help conserve soil and water. The potential for pasture forages is high.

The potential for most urban uses is high. The potential for recreational uses is medium because of sandy material.

This soil has very high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, red maple, hickory, yellow-poplar, black tupelo, American elm, American beech, southern red oak, water oak, and white oak. The understory species are mainly dogwood, sassafras, sourwood, and waxmyrtle. There are no major limitations for woodland use and management. Capability class I; woodland group 1o.

TaB—Tarboro loamy sand, 0 to 6 percent slopes. This somewhat excessively drained soil is on low ridges on stream terraces. The mapped areas are 4 to more than 100 acres in size.

Typically, the surface layer is brown loamy sand 8 inches thick. The underlying material extends to a depth of 99 inches or more. It is yellowish brown and brownish yellow loamy sand in the upper part, yellow sand in the middle part, and very pale brown sand and coarse sand in the lower part (fig. 12).

Included with this soil in mapping are a few small areas of Conetoe soils and a few areas of soils that have gray mottles within 40 inches of the surface. Also included are low-lying areas of soils that are subject to flooding.

The organic matter content in the surface layer is very low. Permeability is rapid, available water capacity is very low, and shrink-swell potential is low. This soil ranges from strongly acid to slightly acid except where limed. The seasonal high water table is below a depth of 6 feet.

About half of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

This soil has medium potential for a few crops such as peanuts and soybeans. It lacks sufficient moisture for most crops during the growing season. Leaching of plant nutrients, soil blowing, and available water capacity are the main limitations. Blowing sand can damage young plants. Minimum tillage, crop residue management, windbreaks, and the inclusion of close-growing grasses and legumes in the cropping system help control soil blowing and conserve moisture. Fertilizers, particularly nitrogen, should be added in split applications. There is medium potential for pasture forages such as Coastal bermudagrass and bahiagrass.

The potential for most urban uses is high. The potential for recreational uses is medium because of the sandy surface layer.

This soil has moderately high potential for needle-leaved trees. The dominant native trees are loblolly pine, longleaf pine, sweetgum, southern red oak, blackjack oak, white oak, post oak, and red maple. The understory species are mainly dogwood, sassafras, and American holly. Available water capacity is the main limitation in woodland use and management. Capability subclass IIIs; woodland group 3s.

Ur—Urban land. These lands consist of areas more than 85 percent of which are covered with streets, buildings of all types, parking lots, railroad yards, and airports. The natural soils were greatly altered by cutting, filling, grading and shaping during the processes of urbanization. The original landscape, topography, and commonly the drainage pattern have been changed. The areas between facilities are used as parks, lawns, playgrounds, cemeteries, and drainageways. Most of the soils have been altered by cutting and filling.

All of the acreage of this unit is in the business districts of Rocky Mount and Tarboro or around the perimeters of these cities. Isolated areas are shown on the detailed soil maps only if they are 5 acres or larger in size. Slope is commonly 0 to 6 percent.

The major concern in areas of this map unit is the excessive runoff from roofs, roads, and parking lots. This runoff increases the flooding hazard in lower lying areas.

There is a severe hazard of waterway siltation from areas that are graded and not immediately stabilized.

Recommendations for use and treatment require onsite investigation. Not placed in a capability subclass or a woodland group.

WaB—Wagram loamy sand, 0 to 6 percent slopes. This well drained soil is in smooth to slightly convex, broad areas on uplands. The mapped areas are 4 to more than 100 acres in size.

Typically, the surface layer is dark grayish brown loamy sand 7 inches thick. The subsurface layer is pale yellow loamy sand 22 inches thick. The subsoil extends to a depth of 94 inches or more. It is yellowish brown and brownish yellow sandy clay loam in the upper part and brownish yellow sandy loam in the lower part.

Included with this soil in mapping are a few small areas of Autryville, Blanton, and Norfolk soils.

The organic matter content in the surface layer is low to very low. Permeability is moderately rapid, available water capacity is low, and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is below a depth of 6 feet.

Most of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

This soil has medium to high potential for corn, soybeans, peanuts, tobacco, and small grain. Leaching of plant nutrients, soil blowing, and available water capacity are the main limitations. Blowing sand can damage young plants. Winter cover crops, minimum tillage, and crop residue management help maintain organic matter content and conserve moisture. Conservation practices such as no-till planting, windbreaks, and crop rotations that include close-growing crops help conserve soil and water. Fertilizers, particularly nitrogen, should be added in split applications. There is high potential for pasture forages such as Coastal bermudagrass and bahiagrass.

The potential for most urban uses is high. The potential for recreational uses is medium because of the sandy surface layer.

This soil has moderately high potential for needle-leaved trees. The dominant native trees are loblolly pine, longleaf pine, red maple, hickory, sweetgum, black tupelo, southern red oak, white oak, and post oak. The understory species are mainly dogwood, sassafras, American holly, sourwood, and waxmyrtle. Available water capacity is the main limitation in woodland use and management. Capability subclass IIs; woodland group 3s.

WaC—Wagram loamy sand, 6 to 10 percent slopes. This well drained soil is on valley side slopes on uplands. The mapped areas are 5 to 30 acres in size.

Typically, the surface layer is dark grayish brown loamy sand 7 inches thick. The subsurface layer is pale yellow loamy sand 22 inches thick. The subsoil extends to a depth of 94 inches or more. It is yellowish brown and brownish yellow sandy clay loam in the upper part and brownish yellow sandy loam in the lower part.

Included with this soil in mapping are a few small areas of soils that have a solum thinner than 60 inches, a redder subsoil, or a surface layer more than 40 inches thick. Also included are a few small areas of Gritney and Norfolk soils.

The organic matter content in the surface layer is low to very low. Permeability is moderately rapid, available water capacity is low, and shrink-swell potential is low. The subsoil is strongly acid or very strongly acid. The seasonal high water table is below a depth of 6 feet.

Most of this soil is in woodland. The rest is mainly cultivated or in pasture.

This soil has medium potential for corn, soybeans, peanuts, tobacco, and small grain. Slope, leaching of plant nutrients, and available water capacity are the main limitations. Winter cover crops, minimum tillage, and crop residue management help maintain organic matter content and conserve moisture. Conservation practices such as no-till planting and crop rotations that include close-growing crops also help conserve soil and water. Fertilizers, particularly nitrogen, should be added in split applications. There is high potential for pasture forages such as Coastal bermudagrass and bahiagrass.

The potential for most urban uses is medium because of slope. The potential for most recreational uses is medium because of slope and the sandy surface layer.

This soil has moderately high potential for needle-leaved trees. The dominant native trees are loblolly pine, longleaf pine, red maple, hickory, sweetgum, black tupelo, southern red oak, white oak, and post oak. The understory species are mainly dogwood, sassafras, American holly, sourwood, and waxmyrtle. Available water capacity is the main limitation in woodland use and management. Capability subclass IIIs; woodland group 3s.

WaD—Wagram loamy sand, 10 to 15 percent slopes. This well drained soil is on short side slopes between smooth uplands and flood plains. The mapped areas are 4 to 75 acres in size.

Typically, the surface layer is dark grayish brown loamy sand 7 inches thick. The subsurface layer is pale yellow loamy sand 22 inches thick. The subsoil extends to a depth of 94 inches or more. It is yellowish brown and brownish yellow sandy clay loam in the upper part and brownish yellow sandy loam in the lower part.

Included with this soil in mapping are a few small areas of soils that have a solum thinner than 60 inches and some that have a redder subsoil. Small areas of soils that have slopes greater than 15 percent or that have a less clayey subsoil are also included. Also included are a few small areas of Blanton and Gritney soils.

The organic matter content in the surface layer is low to very low. Permeability is moderately rapid, available water capacity is low, and shrink-swell potential is low.

Runoff is rapid. The subsoil is strongly acid or very strongly acid. The seasonal high water table is below a depth of 6 feet.

Most of the acreage of this soil is in woodland. Only a small acreage is cultivated or in pasture.

This soil has low potential for cultivated crops. Slope, available water capacity, runoff, and susceptibility to leaching are the main limitations. There is medium potential for pasture forages such as Coastal bermudagrass and bahiagrass.

The potential for most urban uses is medium because of slope. The recreational potential is medium because of slope and the sandy surface layer.

This soil has moderately high potential for needle-leaved trees. The dominant native trees are loblolly pine, longleaf pine, red maple, hickory, sweetgum, black tupelo, southern red oak, white oak, and post oak. The understory species are mainly dogwood, sassafras, American holly, sourwood, and waxmyrtle. Low available water capacity is the main limitation in woodland use and management. Capability subclass IVs; woodland group 3s.

We—Wahee fine sandy loam. This nearly level, somewhat poorly drained soil is on broad flats and in slightly depressional drainageways of stream terraces. The mapped areas are 4 to 30 acres in size.

Typically, the surface layer is dark grayish brown fine sandy loam 9 inches thick. The subsoil is 54 inches thick. It is light yellowish brown clay loam in the upper part, gray clay in the middle part, and gray clay loam in the lower part. The underlying material to a depth of 75 inches is gray sandy clay loam.

Included with this soil in mapping are a few small areas of Altavista, Dogue, and Roanoke soils. Also included are a few areas of soils that have a solum thinner than 50 inches.

The organic matter content in the surface layer is low. Permeability is slow, the available water capacity is high, and shrink-swell potential is moderate. The subsoil is strongly acid or very strongly acid. The seasonal high water table is within 1 foot of the surface. This soil is commonly flooded for brief periods.

About half of the acreage of this soil is in woodland. The rest is mainly in pasture or is cultivated.

This soil has high potential for corn, soybeans, and small grain. There is low potential for tobacco, cotton, and peanuts. Wetness and flooding are the main limitations. Minimum tillage, cover crops, and the inclusion of grasses and legumes in the conservation cropping system help maintain tilth and production. Tillage can be delayed in spring because of wetness. Slow permeability is a limitation to the installation of drainage systems. The potential for pasture forages, such as fescue and ladino clover, is high.

The potential for most urban and recreational uses is low because of flooding, wetness, permeability, and low strength.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are pond pine, loblolly pine, red maple, green ash, hickory, sweetgum, black tupelo, elm, river birch, American sycamore, water oak, and willow oak. The understory species are mainly cedar, American holly, sweetbay, sourwood, reeds, and waxmyrtle. Wetness and flooding are the main limitations for woodland use and management. Capability subclass IIIw; woodland group 2w.

Wh—Wehadkee silt loam. This nearly level, poorly drained soil is on broad flood plains along creeks and streams. The mapped areas are 4 to 50 acres or more in size.

Typically, the surface layer is brown silt loam 6 inches thick. The underlying material extends to a depth of 84 inches or more. It is light brownish gray loam in the upper part, gray loam in the middle part, and gray clay loam in the lower part.

Included with this soil in mapping are a few small areas of soils that have a loam or fine sandy loam surface layer. Also included are a few small areas of Chewacla soils.

The organic matter content of the surface layer is medium. Permeability is moderate, the available water capacity is high, and the shrink-swell potential is low. The subsoil ranges from very strongly acid to slightly acid. The seasonal high water table is within 2.5 feet of the surface. This soil is commonly flooded for brief periods.

Most of the acreage of this soil is in woodland. A small acreage is in pasture.

This soil has low potential for crop production. Flooding and wetness are the main limitations. Lack of suitable outlets is a limitation to the installation of drainage systems. The potential is high for pasture forages, such as fescue and ladino clover, if the soil is drained and protected from flooding.

The potential for most urban and recreational uses is low because of flooding and wetness.

This soil has very high potential for needle-leaved and broad-leaved trees. The dominant native trees are baldcypress, red maple, green ash, hickory, sweetgum, swamp tupelo, elm, yellow-poplar, river birch, water oak, and willow oak. The understory species are mainly cedar, American holly, sweetbay, sourwood, reeds, and waxmyrtle. Wetness and flooding are the main limitations for woodland use and management. Capability subclass VIw; woodland group 1w.

WkB—Wickham sandy loam, 0 to 4 percent slopes. This well drained soil is on smooth, low ridges on stream terraces. The mapped areas are 4 to 50 acres in size.

Typically, the surface layer is brown sandy loam 8 inches thick. The subsurface layer is reddish yellow sandy loam 4 inches thick. The subsoil is 34 inches thick. It is reddish yellow sandy loam in the upper part, yellowish red sandy clay loam in the middle part, and yellowish red sandy loam in the lower part. The underlying material to a depth of 99 inches is strong brown loamy sand and reddish yellow sand.

Included with this soil in mapping are a few small areas of Conetoe, State, and Tarboro soils. Also included are a few low-lying areas of soils that are subject to flooding.

The organic matter content in the surface layer is low. Permeability is moderate, available water capacity is medium, and shrink-swell potential is low. The subsoil ranges from very strongly acid to medium acid. The seasonal high water table is below a depth of 6 feet.

Most of the acreage of this soil is cultivated. The rest is mainly in woodland and pasture.

The potential is high for corn, soybeans, peanuts, tobacco, cotton, and small grain. Runoff and susceptibility to erosion are the main limitations. Winter cover crops, minimum tillage, and crop residue management help control runoff and erosion and maintain tilth and organic matter content. Conservation practices such as no-till planting, field borders, and crop rotations that include close-growing crops also help conserve soil and water. The potential for pasture forages is high.

The potential for most urban and recreation uses is high.

This soil has high potential for broad-leaved and needle-leaved trees. The dominant native trees are loblolly pine, red maple, hickory, yellow-poplar, black tupelo, American elm, American beech, southern red oak, water oak, and white oak. The understory species are mainly dogwood, sassafras, sourwood, and waxmyrtle. There are no major limitations for woodland use and management. Capability subclass IIe; woodland group 2o.

Use and management of the soils

The soil survey is a detailed inventory and evaluation of the most basic resource of the survey area—the soil. It is useful in adjusting land use, including urbanization, to the limitations and potentials of natural resources and the environment. Also, it can help avoid soil-related failures in uses of the land.

While a soil survey is in progress, soil scientists, conservationists, engineers, and others keep extensive notes about the nature of the soils and about unique aspects of behavior of the soils. These notes include data on erosion, drought damage to specific crops, yield estimates, flooding, the functioning of septic tank disposal systems, and other factors affecting the productivity, potential, and limitations of the soils under various uses and management. In this way, field experience and measured data on soil properties and performance are used as a basis for predicting soil behavior.

Information in this section is useful in planning use and management of soils for crops and pasture and woodland; as sites for buildings, highways and other transportation systems, sanitary facilities, and parks and other recreation facilities; and for wildlife habitat. From the data presented, the potential of each soil for specified land uses can be determined, soil limitations to these land uses can be identified, and costly failures in houses and other structures, caused by unfavorable soil properties, can be avoided. A site where soil properties are favorable can be selected, or practices that will overcome the soil limitations can be planned.

Planners and others using the soil survey can evaluate the impact of specific land uses on the overall productivity of the survey area or other broad planning area and on the environment. Productivity and the environment are closely related to the nature of the soil. Plans should maintain or create a land-use pattern in harmony with the natural soil.

Contractors can find information that is useful in locating sources of sand and gravel, roadfill, and topsoil. Other information indicates the presence of wetness or very firm soil horizons that cause difficulty in excavation.

Health officials, highway officials, engineers, and many other specialists also can find useful information in this soil survey. The safe disposal of wastes, for example, is closely related to properties of the soil. Pavements, sidewalks, campsites, playgrounds, lawns, and trees and shrubs are influenced by the nature of the soil.

Crops and pasture

James Q. Wooten, district conservationist, and Emmett R. Waller, Jr., assistant state resource conservationist, Soil Conservation Service, helped prepare this section.

The major management concerns in the use of the soils for crops and pasture are described in this section. In addition, the crops or pasture plants best suited to the soil, including some not commonly grown in the survey area, are discussed; the system of land capability classification used by the Soil Conservation Service is explained; and the predicted yields of the main crops and hay and pasture plants are presented for each soil.

This section provides information about the overall agricultural potential of the survey area and about the management practices that are needed. The information is useful to equipment dealers, land improvement contractors, fertilizer companies, processing companies, planners, conservationists, and others. For each kind of soil, information about management is presented in the section "Soil maps for detailed planning." Planners of management systems for individual fields or farms, should also consider the detailed information given in the description of each soil.

In 1971, more than 100,000 acres in the survey area was used for crops and pasture, according to the Conservation Needs Inventory. Of this total, 13,178 acres was used for pasture; 99,130 acres, for row crops; 2,965 acres, for close-growing crops; and 10,016 acres, for rotation hay and pasture.

Edgecombe County's farms are following a nationwide pattern: the size of farms is increasing, and the total number of farms is diminishing. Farmers are increasing their acreages through the use of more and better farm machinery and other advancements in agricultural technology.

Acreage in crops and pasture is gradually decreasing as more and more land is used for urban development. The use of this soil survey to help make land use decisions that may influence the future role of farming in the county is discussed in the section "General soil map for broad land use planning."

Agriculture has long been Edgecombe County's economic backbone. The combination of rich, fertile soils and a favorable climate is suited to the production of traditional southern crops. This suitability is reflected in the county's record of crop yields and total yearly production. Edgecombe County ranks as one of the top North Carolina counties in total production of such crops as tobacco, peanuts, and cotton.

Well drained, nearly level to gently sloping soils that have a sandy loam topsoil are used primarily for these crops. Aycock, Norfolk, Marlboro, State, Goldsboro, Wickham, Altavista, Foreston, and Exum soils are the most commonly used. Peanuts are grown mainly on the relatively sandy Norfolk, State, Tarboro, Wagram, and Conetoe soils.

Corn and soybeans in large acreages are grown throughout Edgecombe County each year. These crops are planted on the deep, droughty sands of the Conetoe and Old Sparta Communities; on the broad, flat, poorly drained soils around the Gatlin Pocosin; and on the rolling, eroding soils of West Edgecombe and Temperance Hall Communities. Many well drained soils are planted to corn and soybeans in rotation with important cash crops.

Small grain is planted primarily as a winter cover crop. Where wheat is grown for grain, soybeans usually follow in late spring or early summer.

Edgecombe County's pastureland consists mainly of two types; fescue grass and clover pastures on somewhat poorly drained to poorly drained soils, and bermudagrass pasture on sandy soils. The amount of land in pasture is decreasing because of the trend toward more production of row crops.

On about 22 percent of Edgecombe County's cropland there is no particular conservation problem. This land has a high potential for continued production of crops. Most of Edgecombe County's land is limited by some soil-related conservation problem because of poor drainage, erosion hazard, or droughty sands.

Soil erosion (fig. 13) is the major concern on about 9 percent of the cropland and pasture in Edgecombe County. If slope is more than 2 percent, erosion is a hazard. Norfolk, Aycock, Marlboro, and Duplin soils, for example, have slopes of 2 to 6 percent, and erosion is a moderate hazard.

Loss of the surface layer through erosion is damaging for two reasons. First, productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. Loss of the surface layer is especially damaging on soils that have a clayey subsoil, such as Gritney and Duplin soils. Second, soil erosion on farmland results in sedimentation of streams. Control of erosion minimizes the pollution of streams by sediment and improves the quality of water for municipal use, for recreation, and for fish and wildlife.

In many sloping fields, tilling or preparing a good seedbed is difficult because the original friable surface soil has been eroded away, leaving clayey or hardpan spots. Such spots are common in areas of moderately eroded Norfolk, Aycock, Marlboro, and Duplin soils.

Erosion control practices provide protective surface cover, reduce runoff, and increase infiltration. A cropping system that keeps vegetative cover on the soil for extended periods can hold soil erosion losses to amounts that will not reduce the productive capacity of the soils. On livestock farms, which require pasture and hay, the legume and grass forage crops in the cropping system reduce erosion on sloping land, provide nitrogen, and improve tilth for the following crop.

Slopes are so short and irregular that contour tillage or terracing is not practical in most areas of the sloping Gritney soils. On these soils, a cropping system that provides substantial vegetative cover is required to control erosion unless minimum tillage is practiced. Minimizing tillage and leaving crop residue on the surface help increase infiltration and reduce the hazards of runoff and erosion. These practices can be adapted to most soils in the survey area.

Terraces and diversions reduce the length of slope and reduce runoff and erosion. Contouring and contour stripcropping are widespread erosion control practices in the survey area. They are best adapted to soils that have smooth, uniform slopes, including most areas of the sloping Aycock, Duplin, Marlboro, and Norfolk soils.

Soil blowing (fig. 14) is a hazard on the sandy Autryville, Blanton, Conetoe, Kenansville, Tarboro, and Wagram soils. Soil blowing can damage these soils in a few hours if winds are strong and the soils are dry and bare of vegetation or surface mulch. Maintaining vegetative cover, surface mulch, or rough surfaces through proper tillage minimizes soil blowing on these soils. Windbreaks of adapted shrubs, such as Tatarian honeysuckle or autumn-olive, are effective in reducing soil blowing on the muck soils. Edgecombe County has 30,000 acres on which excessive sandiness and

droughtiness (fig. 15) are concerns. This acreage is 24 percent of the cropland in the county.

Information for the design of erosion control practices for each kind of soil is available at local offices of the Soil Conservation Service.

Soil drainage is the major management need on about 45 percent of the acreage used for crops and pasture in the survey area. Some soils are so wet that the production of crops common to the area is generally not possible without artificial drainage. These are the poorly drained and very poorly drained Ballahack, Bibb, Cape Fear, Coxville, Grantham, Johnston, Lumbee, Meggett, Portsmouth, Rains, Roanoke, and Wehadkee soils.

Unless artificially drained, the somewhat poorly drained soils are so wet that crops are damaged in most years. In this category are the Johns, Lynchburg, Nahunta, and Wahee soils.

Altavista, Dogue, Duplin, Exum, Foreston, Goldsboro, and Pactolus soils have good natural drainage most of the year, but they tend to dry out slowly after rains. Artificial drainage is needed in some of these wetter areas.

The design of both surface and subsurface drainage systems varies with the kind of soil. A combination of surface drainage and tile drainage is needed in most areas of the poorly drained and very poorly drained soils used for intensive row cropping. Drains have to be more closely spaced in slowly permeable soils than in more permeable soils.

Soil fertility is naturally low in most soils on uplands in the survey area. The soils on flood plains range from slightly acid to mildly alkaline and are naturally higher in plant nutrients than most soils on uplands.

Many soils on uplands are naturally very strongly acid. If they have never been limed, applications of ground limestone are required to raise the pH level sufficiently for good growth of most locally grown crops that grow only on nearly neutral soils. Available phosphorus and potash levels are naturally low in most of these soils. On all soils, additions of lime and fertilizer should be based on the results of soil tests, on the need of the crop, and on the expected level of yields. The Cooperative Extension Serice can help in determining the kinds and amounts of fertilizer and lime to apply.

Soil tilth is an important factor in the germination of seeds and in the infiltration of water into the soil. Soils with good tilth are granular and porous.

Fall plowing is generally not a good practice on the county's light colored soils that have a surface layer of silt loam because of the crust that forms during winter and spring. Many of the soils are nearly as dense and hard at planting time after fall plowing as they were before they were plowed. Also, about two-thirds of the cropland consists of sloping soils that are subject to damaging erosion if they are plowed in the fall.

In general, in the survey area the soils that are well suited to crops are also well suited to urban development. The data about specific soils in this soil survey can be used in planning future land use patterns. Potential productive capacity in farming should be weighed against soil limitations and potential for nonfarm development.

Yields per acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. Absence of an estimated yield indicates that the soil is not suited to the crop or the crop is not commonly grown on the soil.

The estimated yields were based mainly on the experience and records of farmers, conservationists, and extension agents. Results of field trials and demonstrations and available yield data from nearby counties were also considered.

The yields were estimated assuming that the latest soil and crop management practices were used. Hay and pasture yields were estimated for the most productive varieties of grasses and legumes suited to the climate and the soil. A few farmers may be obtaining average yields higher than those shown in table 5.

The management needed to achieve the indicated yields of the various crops depends on the kind of soil and the crop. Such management provides drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate tillage practices, including time of tillage and seedbed preparation and tilling when soil moisture is favorable; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residues, barnyard manure, and green-manure crops; harvesting crops with the smallest possible loss; and timeliness of all fieldwork.

The estimated yields reflect the productive capacity of the soils for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not included because the acreage of these crops is small. The local offices of the Soil Conservation Service and the Cooperative Extension Service can provide information about the management concerns and productivity of the soils for these crops.

Capability classes and subclasses

Capability classes and subclasses show, in a general way, the suitability of soils for most kinds of field crops. The soils are classed according to their limitations when

they are used for field crops, the risk of damage when they are used, and the way they respond to treatment. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible but unlikely major reclamation projects; and does not apply to horticultural crops or other crops that require special management. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forest trees or for engineering purposes.

In the capability system, all kinds of soil are grouped at three levels: capability class, subclass, and unit. Only the levels class and subclass are used in this survey. These levels are defined in the following paragraphs. A survey area may not have soils of all classes.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants, or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants, or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and landforms have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class; they are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is too cold or too dry.

In class I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w, s,* or *c* because the soils in class V are subject to little or no erosion, though they have other limitations that restrict their use to pasture, woodland, wildlife habitat, or recreation.

The capability subclass is identified in the description of each soil map unit in the section "Soil maps for detailed planning."

Woodland management and productivity

Edwin L. Young, forester, and James Q. Wooten, district conservationist, Soil Conservation Service, helped prepare this section.

Originally, all of Edgecombe County was a forest of needle-leaved and broad-leaved trees. Loblolly, longleaf, and shortleaf pines; upland oaks; hickories; holly; and other trees grew on the better drained soils. Sweetgum, blackgum, yellow-poplar, red maple, and bottom land oaks such as water oak and willow oak grew on the poorly drained soils. In general, the soils of Edgecombe County have a high potential for production of both needle-leaved and broad-leaved trees.

Approximately 46 percent of the total land area in the county is commercial woodland. Good stands of commercial trees are produced throughout the county; however, wood production could be increased on 80 percent of the woodland by good management. For this reason, the value of the county's woodlands is much below the potential.

The value of Edgecombe County's woodland cannot be measured by its timber market value alone. Wooded areas also have esthetic value and provide habitats suitable for openland, woodland, and wetland wildlife.

Table 6 contains information useful to woodland owners or forest managers planning use of the soils for wood crops. Only those soils suitable for wood crops are listed, and the ordination (woodland suitability) symbol for each soil is given. All soils bearing the same ordination symbol require the same general kinds of woodland management and have about the same potential productivity.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for important trees. The number 1 indicates very high productivity; 2, high; 3, moderately high; 4, moderate; and 5, low. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *x* indicates stoniness or rockiness; *w*, excessive water in or on the soil; *t*, toxic substances in the soil; *d*, restricted root depth; *c*, clay in the upper part of the soil; *s*, sandy texture; *f*, high content of coarse fragments in the soil profile; and *r*, steep slopes. The letter *o* indicates insignificant limitations or restrictions. If a soil has more than one limitation, priority in placing the soil into a limitation class is in the following order: x, w, t, d, c, s, f, and r.

In table 6 the soils are also rated for a number of factors to be considered in management. *Slight, moderate,* and *severe* are used to indicate the degree of major soil limitations.

Ratings of the *erosion hazard* indicate the risk of loss of soil in well managed woodland. The risk is *slight* if the

expected soil loss is small, *moderate* if some measures are needed to control erosion during logging and road construction, and *severe* if intensive management or special equipment and methods are needed to prevent excessive loss of soil.

Ratings of *equipment limitation* reflect the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. A rating of *slight* indicates that use of equipment is not limited to a particular kind of equipment or time of year; *moderate* indicates a short seasonal limitation or a need for some modification in management or equipment; *severe* indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

Seedling mortality ratings indicate the degree that the soil affects expected mortality of planted tree seedlings. Plant competition is not considered in the ratings. Seedlings from good planting stock that are properly planted during a period of sufficient rainfall are rated. A rating of *slight* indicates that the expected mortality of the planted seedlings is less than 25 percent; *moderate*, 25 to 50 percent; and *severe*, more than 50 percent.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index*. This index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Common trees are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

Trees to plant are those that are suitable for commercial wood production and that are suited to the soils.

Engineering

John F. Rice, assistant state conservation engineer, Soil Conservation Service, helped prepare this section.

This section provides information about the use of soils for building sites, sanitary facilities, construction material, and water management. Among those who can benefit from this information are engineers, landowners, community planners, town and city managers, land developers, builders, contractors, and farmers.

The ratings in the engineering tables are based on test data and estimated data in the "Soil properties" section. The ratings were determined jointly by soil scientists and engineers of the Soil Conservation Service using known relationships between the soil properties and the behavior of soils in various engineering uses.

Among the soil properties and site conditions identified by a soil survey and used in determining the ratings in this section were grain-size distribution, liquid limit, plasticity index, soil reaction, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure or aggregation, in-place soil density, and geologic origin of the soil material. Where pertinent, data about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of absorbed cations were also considered.

On the basis of information assembled about soil properties, ranges of values can be estimated for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, shear strength, compressibility, slope stability, and other factors of expected soil behavior in engineering uses. As appropriate, these values can be applied to each major horizon of each soil or to the entire profile.

These factors of soil behavior affect construction and maintenance of roads, airport runways, pipelines, foundations for small buildings, ponds and small dams, irrigation projects, drainage systems, sewage and refuse disposal systems, and other engineering works. The ranges of values can be used to (1) select potential residential, commercial, industrial, and recreational areas; (2) make preliminary estimates pertinent to construction in a particular area; (3) evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; (4) evaluate alternative sites for location of sanitary landfills, onsite sewage disposal systems, and other waste disposal facilities; (5) plan detailed onsite investigations of soils and geology; (6) find sources of sand, clay, and topsoil; (7) plan farm drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; (8) relate performance of structures already built to the properties of the kinds of soil on which they are built so that performance of similar structures on the same or a similar soil in other locations can be predicted; and (9) predict the trafficability of soils for cross-country movement of vehicles and construction equipment.

Data presented in this section are useful for land-use planning and for choosing alternative practices or general designs that will overcome unfavorable soil properties and minimize soil-related failures. Limitations to the use of these data, however, should be well understood. First, the data are generally not presented for soil material below a depth of 5 or 6 feet. Also, because of the scale of the detailed map in this soil survey, small areas of soils that differ from the dominant soil may be included in mapping. Thus, these data do not eliminate the need for onsite investigations, testing, and analysis by personnel having expertise in the specific use contemplated.

The information is presented mainly in tables. Table 7 shows, for each kind of soil, the degree and kind of limitations for building site development; table 8, for sanitary facilities; and table 10, for water management. Table 9 shows the suitability of each kind of soil as a source of construction materials.

The information in the tables, along with the soil map, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations

and to construct interpretive maps for specific uses of land.

Some of the terms used in this soil survey have a special meaning in soil science. Many of these terms are defined in the Glossary.

Building site development

The degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, and local roads and streets are indicated in table 7. A *slight* limitation indicates that soil properties generally are favorable for the specified use; any limitation is minor and easily overcome. A *moderate* limitation indicates that soil properties and site features are unfavorable for the specified use, but the limitations can be overcome or minimized by special planning and design. A *severe* limitation indicates that one or more soil properties or site features are so unfavorable or difficult to overcome that a major increase in construction effort, special design, or intensive maintenance is required. For some soils rated severe, such costly measures may not be feasible.

Shallow excavations are made for pipelines, sewerlines, communications and power transmission lines, basements, open ditches, and cemeteries. Such digging or trenching is influenced by soil wetness caused by a seasonal high water table; the texture and consistence of soils; the tendency of soils to cave in or slough; and the presence of very firm, dense soil layers or large stones. In addition, excavations are affected by slope of the soil and the probability of flooding. Ratings do not apply to soil horizons below a depth of 6 feet unless otherwise noted.

In the soil series descriptions, the consistence of each soil horizon is given, and the presence of very firm or extremely firm horizons, usually difficult to excavate, is indicated.

Dwellings and *small commercial buildings* referred to in table 7 are built on undisturbed soil and have foundation loads of a dwelling no more than three stories high. Separate ratings are made for small commercial buildings without basements and for dwellings with and without basements. For such structures, soils should be sufficiently stable that cracking or subsidence of the structure from settling or shear failure of the foundation does not occur. These ratings were determined from estimates of the shear strength, compressibility, and shrink-swell potential of the soil. Soil texture, plasticity and in-place density, soil wetness, and depth to a seasonal high water table were also considered. Soil wetness and depth to a seasonal high water table indicate potential difficulty in providing adequate drainage for basements, lawns, and gardens. Slope is also an important consideration in the choice of sites for these structures and was considered in determining the ratings. Susceptibility to flooding is a serious hazard.

Local roads and streets referred to in table 7 have an all-weather surface that can carry light to medium traffic all year. They consist of a subgrade of the underlying soil material; a base of gravel, crushed rock fragments, or soil material stabilized with lime or cement; and a flexible or rigid surface, commonly asphalt or concrete. The roads are graded with soil material at hand, and most cuts and fills are less than 6 feet deep.

The load supporting capacity and the stability of the soil as well as the quantity and workability of fill material available are important in design and construction of roads and streets. The classifications of the soil and the soil texture, density, and shrink-swell potential are indicators of the traffic supporting capacity used in making the ratings. Soil wetness, flooding, and slope affect stability and ease of excavation.

Sanitary facilities

Favorable soil properties and site features are needed for proper functioning of septic tank absorption fields, sewage lagoons, and sanitary landfills. The nature of the soil is important in selecting sites for these facilities and in identifying limiting soil properties and site features to be considered in design and installation. Also, those soil properties that affect ease of excavation or installation of these facilities will be of interest to contractors and local officials. Table 8 shows the degree and kind of limitations of each soil for such uses and for use of the soil as daily cover for landfills. It is important to observe local ordinances and regulations.

If the degree of soil limitation is expressed as *slight*, soils are generally favorable for the specified use and limitations are minor and easily overcome; if *moderate*, soil properties or site features are unfavorable for the specified use, but limitations can be overcome by special planning and design; and if *severe*, soil properties or site features are so unfavorable or difficult to overcome that major soil reclamation, special designs, or intensive maintenance is required. Soil suitability is rated by the terms *good*, *fair*, and *poor*, which mean about the same as *slight*, *moderate*, and *severe*.

Septic tank absorption fields are subsurface systems of tile or perforated pipe that distribute effluent from a septic tank into the natural soil. Only the soil horizons between depths of 18 and 72 inches are evaluated for this use. The soil properties and site features considered are those that affect the absorption of the effluent and those that affect the construction of the system.

Properties and features that affect absorption of the effluent are permeability, depth to seasonal high water table, and susceptibility to flooding. Excessive slope can cause lateral seepage and surfacing of the effluent. Also, soil erosion and soil slippage are hazards if absorption fields are installed on sloping soils.

In some soils, loose sand is less than 4 feet below the tile lines. In these soils the absorption field does not

adequately filter the effluent, and ground water in the area may be contaminated.

On many of the soils that have moderate or severe limitations for use as septic tank absorption fields, a system to lower the seasonal water table can be installed or the size of the absorption field can be increased so that performance is satisfactory.

Waste treatment lagoons are ponds constructed to hold animal waste or other organic waste for biological treatment. Aerobic lagoons are generally designed to hold 2 to 5 feet of liquids, and anaerobic lagoons are generally designed to hold more than 6 feet of liquids. Lagoons generally have a nearly level floor area surrounded by cut slopes or embankments of compacted, nearly impervious soil material. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Soils that are very high in content of organic matter and those that have cobbles, stones, or boulders are not suitable. Unless the soil has very slow permeability, contamination of ground water is a hazard if the seasonal high water table is above the level of the lagoon floor. If the water table is seasonally high, seepage of ground water into the lagoon can seriously reduce the lagoon's capacity for liquid waste. Slope and susceptibility to flooding also affect the suitability of sites for lagoons or the cost of construction. Shear strength and permeability of compacted soil material affect the performance of embankments.

Sanitary landfill is a method of disposing of solid waste by placing refuse in successive layers either in excavated trenches or on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil material. Landfill areas are subject to heavy vehicular traffic. Risk of polluting ground water and trafficability affect the suitability of a soil for this use. The best soils have a loamy or silty texture, have moderate to slow permeability, are deep to a seasonal water table, and are not subject to flooding. Clayey soils are likely to be sticky and difficult to spread. Sandy or gravelly soils generally have rapid permeability, which might allow noxious liquids to contaminate ground water. Soil wetness can be a limitation because operating heavy equipment on a wet soil is difficult. Seepage into the refuse increases the risk of pollution of ground water.

Ease of excavation affects the suitability of a soil for the trench type of landfill. If the seasonal water table is high, water will seep into trenches.

Unless otherwise stated, the limitations in table 8 apply only to the soil material within a depth of about 6 feet. If the trench is deeper, a limitation of slight or moderate may not be valid. Site investigation is needed before a site is selected.

Daily cover for landfill should be soil that is easy to excavate and spread over the compacted fill in wet and dry periods. Soils that are loamy or silty are better than other soils. Clayey soils may be sticky and difficult to spread; sandy soils may be subject to soil blowing.

The soils selected for final cover of landfills should be suitable for growing plants. Of all the horizons, the A horizon in most soils has the best workability, more organic matter, and the best potential for growing plants. Thus, for either the area- or trench-type landfill, stockpiling material from the A horizon for use as the surface layer of the final cover is desirable.

If it is necessary to bring in soil material for daily or final cover, thickness of suitable soil material available and depth to a seasonal high water table in soils surrounding the site should be evaluated. Other factors to be evaluated are those that affect reclamation of the borrow areas. These factors include slope, erodibility, and potential for plant growth.

Construction materials

The suitability of each soil as a source of roadfill, sand, and topsoil is indicated in table 9 by ratings of good, fair, or poor. The texture, thickness, and organic-matter content of each soil horizon are important factors in rating soils for use as construction materials. Each soil is evaluated to the depth observed, generally about 6 feet.

Roadfill is soil material used in embankments for roads. Soils are evaluated as a source of roadfill for low embankments, which generally are less than 6 feet high and less exacting in design than high embankments. The ratings reflect the ease of excavating and working the material and the expected performance of the material where it has been compacted and adequately drained. The performance of soil after it is stabilized with lime or cement is not considered in the ratings, but information about some of the soil properties that influence such performance is given in the descriptions of the soil series.

The ratings apply to the soil material between the A horizon and a depth of 5 to 6 feet. It is assumed that soil horizons will be mixed during excavation and spreading. Many soils have horizons of contrasting suitability within their profile. The estimated engineering properties in table 13 provide specific information about the nature of each horizon. This information can help determine the suitability of each horizon for roadfill.

Soils rated *good* are coarse grained. They have low shrink-swell potential. They are at least moderately well drained and have slopes of 15 percent or less. Soils rated *fair* have a plasticity index of less than 15 and have other limiting features, such as moderate shrink-swell potential, moderately steep slopes, or wetness. If the thickness of suitable material is less than 3 feet, the entire soil is rated *poor*.

Sand (fig. 16) is used in great quantities in many kinds of construction. The ratings in table 9 provide guidance as to where to look for probable sources and are based

on the probability that soils in a given area contain sizable quantities of sand. A soil rated *good* or *fair* has a layer of suitable material at least 3 feet thick, the top of which is within a depth of 6 feet. Fine-grained soils are not suitable sources of sand.

The ratings do not take into account depth to the water table or other factors that affect excavation of the material. Descriptions of grain size, kinds of minerals, reaction, and stratification are given in the soil series descriptions and in table 13.

Topsoil is used in areas where vegetation is to be established and maintained. Suitability is affected mainly by the ease of working and spreading the soil material in preparing a seedbed and by the ability of the soil material to support plantlife. Also considered is the damage that can result at the area from which the topsoil is taken.

The ease of excavation is influenced by the thickness of suitable material, wetness, and slope. The ability of the soil to support plantlife is determined by texture, structure, and the amount of soluble salts or toxic substances. Organic matter in the A1 or Ap horizon greatly increases the absorption and retention of moisture and nutrients. Therefore, the soil material from these horizons should be carefully preserved for later use.

Soils rated *good* have at least 16 inches of friable loamy material at their surface and have gentle slopes. They are low in soluble salts that can restrict plant growth. They are naturally fertile or respond well to fertilizer. They are not so wet that excavation is difficult during most of the year.

Soils rated *fair* are loose sandy soils or firm loamy or clayey soils in which the suitable material is only 8 to 16 inches thick.

Soils rated *poor* are very sandy soils and very firm clayey soils, soils that have suitable layers less than 8 inches thick, and poorly drained soils.

Although a rating of *good* is not based entirely on high content of organic matter, a surface horizon is generally preferred for topsoil because of its organic-matter content. This horizon is designated as A1 or Ap in the soil series descriptions. The absorption and retention of moisture and nutrients for plant growth are greatly increased by organic matter.

Water management

Many soil properties and site features that affect water management practices have been identified in this soil survey. In table 10 the degree of soil limitation and soil and site features that affect use are indicated for each kind of soil. This information is significant in planning, installing, and maintaining water control structures.

Soil and site limitations are expressed as slight, moderate, and severe. *Slight* means that the soil properties and site features are generally favorable for the specified use and that any limitation is minor and easily overcome. *Moderate* means that some soil properties or site features are unfavorable for the specified use but can be overcome or modified by special planning and design. *Severe* means that the soil properties and site features are so unfavorable and so difficult to correct or overcome that major soil reclamation, special design, or intensive maintenance is required.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have a low seepage potential, which is determined by permeability and the depth to permeable material.

Embankments, dikes, and levees require soil material that is resistant to seepage, erosion, and piping and has favorable stability, shrink-swell potential, shear strength, and compaction characteristics. Organic matter in a soil downgrades the suitability of a soil for use in embankments, dikes, and levees.

Aquifer-fed excavated ponds are bodies of water made by excavating a pit or dugout into a ground-water aquifer. Excluded are ponds that are fed by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Ratings in table 10 are for ponds that are properly designed, located, and constructed. Soil properties and site features that affect aquifer-fed ponds are depth to a permanent water table, permeability of the aquifer, quality of the water, and ease of excavation.

Drainage of soil is affected by such soil properties as permeability; texture; depth to layers that affect the rate of water movement, depth to the water table, slope, stability of ditchbanks, susceptibility to flooding, salinity and alkalinity, and availability of outlets for drainage.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to intercept runoff. They allow water to soak into the soil or flow slowly to an outlet. Features that affect suitability of a soil for terraces are uniformity and steepness of slope; depth to unfavorable material; permeability; ease of establishing vegetation; and resistance to water erosion, soil blowing, soil slipping, and piping.

Grassed waterways are constructed to channel runoff to outlets at a nonerosive velocity. Features that affect the use of soils for waterways are slope, permeability, erodibility, wetness, and suitability for permanent vegetation.

Recreation

James Q. Wooten, district conservationist, and E.J. Young, woodland conservationist, Soil Conservation Service, helped prepare this section.

The soils of Edgecombe County have a high potential for recreation development. Furthermore, the climate is favorable and the topography is suitable for a variety of outdoor recreation facilities. The towns of Rocky Mount, Pinetops, and Tarboro are centers of recreation activities in Edgecombe County.

The soils of the survey area are rated in table 11 according to limitations that affect their suitability for recreation uses. The ratings are based on such restrictive soil features as flooding, wetness, slope, and texture of the surface layer. Not considered in these ratings, but important in evaluating a site, are location and accessibility of the area, size and shape of the area and its scenic quality, the ability of the soil to support vegetation, access to water, availability of sites for water impoundment, and either access to public sewerlines or suitability of the soils for use as septic tank absorption fields. Soils subject to flooding are limited, in varying degree, for recreation use by the duration and intensity of flooding and the season when flooding occurs. Onsite assessment of height, duration, intensity, and frequency of flooding is essential in planning recreation facilities.

The degree of the limitation of the soils is expressed as slight, moderate, or severe. *Slight* means that the soil properties are generally favorable and that the limitations are minor and easily overcome. *Moderate* means that the limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in table 11 can be supplemented by information in other parts of this survey. Especially helpful are interpretations for septic tank absorption fields, given in table 8, and interpretations for dwellings without basements and for local roads and streets, given in table 7.

Camp areas require such site preparation as shaping and leveling for tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils for this use have mild slopes and are not wet or subject to flooding during the period of use. The surface absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes can greatly increase the cost of constructing camping sites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for use as picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes that will increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is firm after rains, and is not dusty when dry.

Paths and trails for walking, horseback riding, bicycling, and other uses should require little or no cutting and filling. The best soils for this use are those that are not wet, are firm after rains, are not dusty when dry, are not subject to flooding more than once during the annual period of use, and have moderate slopes.

Wildlife habitat

James Q. Wooten, district conservationist, and John P. Edwards, wildlife biologist, Soil Conservation Service, helped prepare this section.

Soils directly affect the kind and amount of vegetation that is available to wildlife as food and cover, and they affect the construction of water impoundments. The kind and abundance of wildlife that populate an area depend largely on the amount and distribution of food, cover, and water. If any one of these elements is missing, is inadequate, or is inaccessible, wildlife either are scarce or do not inhabit the area.

If the soils have the potential, wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by helping the natural establishment of desirable plants.

In table 12, the soils in the survey area are rated according to their potential to support the main kinds of wildlife habitat in the area. This information can be used in planning for parks, wildlife refuges, nature study areas, and other developments for wildlife; selecting areas that are suitable for wildlife; selecting soils that are suitable for creating, improving, or maintaining specific elements of wildlife habitat; and determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* means that the element of wildlife habitat or the kind of habitat is easily created, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected if the soil is used for the designated purpose. A rating of *fair* means that the element of wildlife habitat or kind of habitat can be created, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* means that limitations are severe for the designated element or kind of wildlife habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* means that restrictions for the element of wildlife habitat or kind of wildlife are very severe, and that unsatisfactory results can be expected. Wildlife habitat is impractical or even impossible to create, improve, or maintain on soils having such a rating.

The elements of wildlife habitat are briefly described in the following paragraphs.

Grain and seed crops are seed-producing annuals used by wildlife. The major soil properties that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, and flood hazard. Soil temperature and soil moisture are also considerations.

Grasses and legumes are domestic perennial grasses and herbaceous legumes that are planted for wildlife food and cover. Major soil properties that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, flood hazard, and slope. Soil temperature and soil moisture are also considerations.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds, that provide food and cover for wildlife. Major soil properties that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, and flood hazard. Soil temperature and soil moisture are also considerations.

Hardwood trees and the associated woody understory provide cover for wildlife and produce nuts or other fruit, buds, catkins, twigs, bark, or foliage that wildlife eat. Major soil properties that affect growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness.

Coniferous plants are cone-bearing trees, shrubs, or ground cover plants that furnish habitat or supply food in the form of browse, seeds, or fruitlike cones. Soil properties that have a major effect on the growth of coniferous plants are depth of the root zone, available water capacity, and wetness.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites, exclusive of submerged or floating aquatics. They produce food or cover for wildlife that use wetland as habitat. Major soil properties affecting wetland plants are texture of the surface layer, wetness, reaction, and slope.

Shallow water areas are bodies of water that have an average depth of less than 5 feet and that are useful to wildlife. They can be naturally wet areas, or they can be created by dams or levees or by water-control structures in marshes or streams. Major soil properties affecting shallow water areas are wetness, slope, and permeability. The availability of a dependable water supply is important if water areas are to be developed.

The kinds of wildlife habitat are briefly described in the following paragraphs.

Openland habitat consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The kinds of wildlife attracted to these areas include mourning dove, quail, red and gray fox, rabbit, and many species of songbirds.

Woodland habitat consists of areas of hardwoods or conifers, or a mixture of both, and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include squirrel and white-tailed deer.

Wetland habitat consists of open, marshy or swampy, shallow water areas where water-tolerant plants grow (fig. 17). Some of the wildlife attracted to such areas are muskrat, raccoon, snipe, and duck. Many mallards, woodducks, and black ducks winter along the Tar River and its tributaries. In spring and early in summer, streams and adjacent wetlands provide important nesting and brood areas for woodducks.

Soil properties

John F. Rice, state conservation engineer, Soil Conservation Service, helped prepare this section.

Extensive data about soil properties are summarized on the following pages. The two main sources of these data are the many thousands of soil borings made during the course of the survey and the laboratory analyses of selected soil samples from typical profiles.

In making soil borings during field mapping, soil scientists can identify several important soil properties. They note the seasonal soil moisture condition or the presence of free water and its depth. For each horizon in the profile, they note the thickness and color of the soil material; the texture, or amount of clay, silt, and sand; the structure, or the natural pattern of cracks and pores in the undisturbed soil; and the consistence of the soil material in place under the existing soil moisture conditions. They record the depth of plant roots, determine the pH or reaction of the soil, and identify any free carbonates.

Samples of soil material are analyzed in the laboratory to verify the field estimates of soil properties and to determine all major properties of key soils, especially properties that cannot be estimated accurately by field observation. Laboratory analyses are not conducted for all soil series in the survey area, but laboratory data for many soil series not tested are available from nearby survey areas.

The available field and laboratory data are summarized in tables. The tables give the estimated range of engineering properties, the engineering classifications, and the physical and chemical properties of each major horizon of each soil in the survey area. They also present data about pertinent soil and water features, and engineering test data.

Engineering properties

Table 13 gives estimates of engineering properties and classifications for the major horizons of each soil in the survey area.

Most soils have, within the upper 5 or 6 feet, horizons of contrasting properties. Table 13 gives information for each of these contrasting horizons in a typical profile. *Depth* to the upper and lower boundaries of each horizon is indicated. More information about the range in depth and about other properties in each horizon is given for each soil series in the section "Soil series and morphology."

Texture is described in table 13 in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in soil material that is less than 2 millimeters in diameter. "Loam," for example, is soil material that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. Other texture terms are defined in the Glossary.

The two systems commonly used in classifying soils for engineering use are the Unified Soil Classification System (*2*) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO) (*1*).

The *Unified* system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter, plasticity index, liquid limit, and organic-matter content. Soils are grouped into 15 classes—eight classes of coarse-grained soils, identified as GW, GP, GM, GC, SW, SP, SM, and SC; six classes of fine-grained soils, identified as ML, CL, OL, MH, CH, and OH; and one class of highly organic soils, identified as Pt. Soils on the borderline between two classes have a dual classification symbol, for example, CL-ML.

The *AASHTO* system classifies soils according to those properties that affect their use in highway construction and maintenance. In this system a mineral soil is classified in one of seven basic groups ranging from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines. At the other extreme, in group A-7, are fine-grained soils. Highly organic soils are classified in group A-8 on the basis of visual inspection.

When laboratory data are available, the A-1, A-2, and A-7 groups are further classified as follows: A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, and A-7-6. As an additional refinement, the desirability of soils as subgrade material can be indicated by a group index number. These numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested in the survey area, with group index numbers in parentheses, is given in table 16. The estimated classification, without group index numbers, is given in table 13. Also in table 13 the percentage, by weight, of rock fragments more than 3 inches in diameter is estimated for each major horizon. These estimates are determined mainly by observing volume percentage in the field and then converting that, by formula, to weight percentage.

Percentage of the soil material less than 3 inches in diameter that passes each of four sieves (U.S. standard) is estimated for each major horizon. The estimates are based on tests of soils that were sampled in the survey area and in nearby areas and on field estimates from many borings made during the survey.

Liquid limit and *plasticity index* indicate the effect of water on the strength and consistence of soil. These indexes are used in both the Unified and AASHTO soil classification systems. They are also used as indicators in making general predictions of soil behavior. Range in liquid limit and in plasticity index is estimated on the basis of test data from the survey area or from nearby areas and on observations of the many soil borings made during the survey.

In some surveys, the estimates are rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterburg limits extend a marginal amount across classification boundaries (1 or 2 percent), the classification in the marginal zone is omitted.

Physical and chemical properties

Table 14 shows estimated values for several soil characteristics and features that affect behavior of soils in engineering uses. These estimates are given for each major horizon, at the depths indicated, in the typical pedon of each soil. The estimates are based on field observations and on test data for these and similar soils.

Permeability is estimated on the basis of known relationships among the soil characteristics observed in the field—particularly soil structure, porosity, and gradation or texture—that influence the downward movement of water in the soil. The estimates are for vertical water movement when the soil is saturated. Not considered in the estimates is lateral seepage or such transient soil features as plowpans and surface crusts. Permeability of the soil is an important factor to be considered in planning and designing drainage systems, in evaluating the potential of soils for septic tank systems and other waste disposal systems, and in many other aspects of land use and management.

Available water capacity is rated on the basis of soil characteristics that influence the ability of the soil to hold water and make it available to plants. Important characteristics are content of organic matter, soil texture, and soil structure. Shallow-rooted plants are not likely to use the available water from the deeper soil horizons. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design of irrigation systems.

Soil reaction is expressed as a range in pH values. The range in pH of each major horizon is based on many field checks. For many soils, the values have been verified by laboratory analyses. Soil reaction is important in selecting the crops, ornamental plants, or other plants to be grown; in evaluating soil amendments for fertility and stabilization; and in evaluating the corrosivity of soils.

Shrink-swell potential depends mainly on the amount and kind of clay in the soil. Laboratory measurements of the swelling of undisturbed clods were made for many soils. For others the swelling was estimated on the basis of the kind and amount of clay in the soil and on mea-

surements of similar soils. The size of the load and the magnitude of the change in soil moisture content also influence the swelling of soils. Shrinking and swelling of some soils can cause damage to building foundations, basement walls, roads, and other structures unless special designs are used. A high shrink-swell potential indicates that special design and added expense may be required if the planned use of the soil will not tolerate large volume changes.

Risk of corrosion pertains to potential soil-induced chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to soil moisture, particle-size distribution, total acidity, and electrical conductivity of the soil material. The rate of corrosion of concrete is based mainly on the sulfate content, texture, and acidity of the soil. Protective measures for steel or more resistant concrete help to avoid or minimize damage resulting from the corrosion. Uncoated steel intersecting soil boundaries or soil horizons is more susceptible to corrosion than an installation that is entirely within one kind of soil or within one soil horizon.

Erosion factors are used to predict the erodibility of a soil and its tolerance to erosion in relation to specific kinds of land use and treatment. The soil erodibility factor (K) is a measure of the susceptibility of the soil to erosion by water. Soils having the highest K values are the most erodible. K values range from 0.10 to 0.64. To estimate annual soil loss per acre, the K value of a soil is modified by factors representing plant cover, grade and length of slope, management practices, and climate. The soil-loss tolerance factor (T) is the maximum rate of soil erosion, whether from rainfall or soil blowing, that can occur without reducing crop production or environmental quality. The rate is expressed in tons of soil loss per acre per year.

Soil and water features

Table 15 contains information helpful in planning land uses and engineering projects that are likely to be affected by soil and water features.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are placed in one of four groups on the basis of the intake of water after the soils have been wetted and have received precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist chiefly of deep, well drained to excessively drained sands or gravels. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils that have a layer that impedes the downward movement of water or soils that have moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clay soils that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Flooding is the temporary covering of soil with water from overflowing streams, with runoff from adjacent slopes, and by tides. Water standing for short periods after rains or after snow melts is not considered flooding, nor is water in swamps and marshes. Flooding is rated in general terms that describe the frequency and duration of flooding and the time of year when flooding is most likely. The ratings are based on evidence in the soil profile of the effects of flooding, namely thin strata of sand, silt, or, in places, clay deposited by floodwater; irregular decrease in organic-matter content with increasing depth; and absence of distinctive soil horizons that form in soils of the area that are not subject to flooding. The ratings are also based on local information about floodwater levels in the area and the extent of flooding; and on information that relates the position of each soil on the landscape to historic floods.

The generalized description of flood hazards is of value in land-use planning and provides a valid basis for land-use restrictions. The soil data are less specific, however, than those provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table is the highest level of a saturated zone more than 6 inches thick for a continuous period of more than 2 weeks during most years. The depth to a seasonal high water table applies to undrained soils. Estimates are based mainly on the relationship between grayish colors or mottles in the soil and the depth to free water observed in many borings made during the course of the soil survey. Indicated in table 15 are the depth to the seasonal high water table; the kind of water table, that is, perched, artesian, or apparent; and the months of the year that the water table commonly is high. Only saturated zones above a depth of 5 or 6 feet are indicated.

Information about the seasonal high water table helps in assessing the need for specially designed foundations, the need for specific kinds of drainage systems, and the need for footing drains to insure dry basements. Such information is also needed to decide whether or not construction of basements is feasible and to determine

how septic tank absorption fields and other underground installations will function. Also, a seasonal high water table affects ease of excavation.

Engineering test data

The results of analyses of engineering properties of several typical soils of the survey area are given in table 16.

The data presented are for soil samples that were collected from carefully selected sites. The soil profiles sampled are typical of the series discussed in the section "Soil series and morphology." The soil samples were analyzed by the Materials and Test Unit, North Carolina Division of Highways.

The methods used in obtaining the data are listed by code in the next paragraph. Most of the codes, in parentheses, refer to the methods assigned by the American Association of State Highway and Transportation Officials. The codes for shrinkage and Unified classification are those assigned by the American Society for Testing and Materials.

The methods and codes are AASHTO classification (M-145-49); Unified classification (D-2487-66T); mechanical analysis (T88-57); liquid limit (T89-60); plasticity index (T90-56); and moisture-density, method A (T99-57).

Classification of the soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (*6*). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. In this system the classification is based on the different soil properties that can be observed in the field or those that can be inferred either from other properties that are observable in the field or from the combined data of soil science and other disciplines. The properties selected for the higher categories are the result of soil genesis or of factors that affect soil genesis. In table 17, the soils of the survey area are classified according to the system. Categories of the system are discussed in the following paragraphs.

ORDER. Ten soil orders are recognized as classes in the system. The properties used to differentiate among orders are those that reflect the kind and degree of dominant soil-forming processes that have taken place. Each order is identified by a word ending in *sol*. An example is Entisol.

SUBORDER. Each order is divided into suborders based primarily on properties that influence soil genesis and are important to plant growth or that are selected to reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquent (*Aqu*, meaning water, plus *ent*, from Entisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of expression of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and a prefix that suggests something about the properties of the soil. An example is Haplaquents (*Hapl*, meaning simple horizons, plus *aquent*, the suborder of Entisols that have an aquic moisture regime).

SUBGROUP. Each great group may be divided into three subgroups: the central (typic) concept of the great groups, which is not necessarily the most extensive subgroup; the intergrades, or transitional forms to other orders, suborders, or great groups; and the extragrades, which have some properties that are representative of the great groups but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that is thought to typify the great group. An example is Typic Haplaquents.

FAMILY. Families are established within a subgroup on the basis of similar physical and chemical properties that affect management. Among the properties considered in horizons of major biological activity below plow depth are particle-size distribution, mineral content, temperature regime, thickness of the soil penetrable by roots, consistence, moisture equivalent, soil slope, and permanent cracks. A family name consists of the name of a subgroup and a series of adjectives. The adjectives are the class names for the soil properties used as family differentiae. An example is fine-loamy, mixed, nonacid, mesic, Typic Haplaquents.

SERIES. The series consists of soils that formed in a particular kind of material and have horizons that, except for texture of the surface soil or of the underlying substratum, are similar in differentiating characteristics and in arrangement in the soil profile. Among these characteristics are color, texture, structure, reaction, consistence, and mineral and chemical composition.

Soil series and morphology

In this section, each soil series recognized in the survey area is described in detail. The descriptions are arranged in alphabetic order by series name.

Characteristics of the soil and the material in which it formed are discussed for each series. Then a pedon, a small three-dimensional area of soil that is typical of the soil series in the survey area, is described. The detailed descriptions of each soil horizon follow standards in the Soil Survey Manual (*5*). Unless otherwise noted, colors described are for moist soil.

Following the pedon description is the range of important characteristics of the soil series in this survey area. Phases, or map units, of each soil series are described in the section "Soil maps for detailed planning."

Altavista series

The Altavista series consists of moderately well drained soils that formed in fluvial sediments. These soils are on stream terraces. Slopes range from 0 to 3 percent.

A typical pedon of Altavista fine sandy loam, 0 to 3 percent slopes, is 6.3 miles east of Rocky Mount on N.C. Highway 97, 1.2 miles east of intersection of State Road 1243 and N.C. Highway 97, 300 feet south on farm path, and 40 feet east of path, in a field:

Ap—0 to 9 inches; brown (10YR 5/3) fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; medium acid; abrupt smooth boundary.

B21t—9 to 26 inches; brownish yellow (10YR 6/6) sandy clay loam; common fine distinct yellowish red and few fine faint strong brown mottles; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; few thin faint patchy clay films on faces of peds; common fine and medium flakes of mica; strongly acid; clear smooth boundary.

B22t—26 to 40 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct light gray (10YR 7/1), strong brown (7.5YR 5/8), and yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few thin faint patchy clay films on faces of peds; common fine and medium flakes of mica; very strongly acid; clear wavy boundary.

B3—40 to 50 inches; mottled light gray (10YR 7/1), strong brown (7.5YR 5/8), very pale brown (10YR 7/4), and yellowish red (5YR 5/8) sandy loam; weak medium subangular blocky structure; very friable; common fine and medium flakes of mica; very strongly acid; clear wavy boundary.

C1—50 to 59 inches; mottled light gray (10YR 7/1), strong brown (7.5YR 5/6), and very pale brown (10YR 7/4) sandy loam; massive; very friable; common fine and medium flakes of mica; very strongly acid; clear wavy boundary.

IIC2—59 to 80 inches; light yellowish brown (10YR 6/4) loamy coarse sand; single grained; very friable; common medium flakes of mica; very strongly acid.

Solum thickness ranges from 30 to 60 inches. The subsoil is dominantly strongly acid or very strongly acid but ranges to medium acid. There are few to common flakes of mica throughout the profile.

The Ap or A1 horizon is brown, grayish brown, dark grayish brown, dark gray, or yellowish brown. The A2 horizon, where present, is pale brown, very pale brown, or light yellowish brown. The A horizon is fine sandy loam, loamy sand, sandy loam, or loam.

The B1 horizon, where present, is light yellowish brown, yellowish brown, brownish yellow, or brown fine sandy loam, sandy loam, or loam. The B2t horizon is yellowish brown, brownish yellow, reddish yellow, strong brown, light yellowish brown, or pale brown sandy clay loam or clay loam. Color of the B3 horizon is similar to that of the B2 horizon, or the B3 horizon is mottled light gray, strong brown, very pale brown, or yellowish red sandy loam, sandy clay loam, or loamy sand.

The C horizon is stratified sandy or loamy material that contains thin clayey strata in a few pedons.

Autryville series

The Autryville series consists of well drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes range from 0 to 6 percent.

A typical pedon of Autryville loamy sand, 0 to 6 percent slopes, is 2 miles south of Tarboro on U.S. Highway 258 and 1/4 mile west of highway, in woods:

O1—2 inches to 1 inch; leaves, twigs, pine needles, and miscellaneous organic matter.

O2—1 inch to 0; dark reddish brown (5YR 3/2) partially decomposed organic matter.

A1—0 to 4 inches; dark grayish brown (10YR 4/2) loamy sand; weak medium granular structure; very friable; many fine and coarse roots; very strongly acid; abrupt wavy boundary.

A2—4 to 26 inches; light yellowish brown (2.5Y 6/4) loamy sand; weak medium granular structure; very friable; common fine and medium roots; strongly acid; clear wavy boundary.

B2t—26 to 38 inches; yellowish brown (10YR 5/6) sandy loam; few fine yellowish red mottles; weak medium subangular blocky structure; very friable; few fine roots; sand grains coated and bridged with clay; strongly acid; gradual wavy boundary.

A'2—38 to 54 inches; brownish yellow (10YR 6/6) loamy sand; weak medium granular structure; very friable; strongly acid; gradual wavy boundary.

B'2t—54 to 84 inches; pale yellow (2.5Y 7/4) sandy loam; common medium distinct light gray (10YR 7/1) and few fine faint brownish yellow mottles; weak medium subangular blocky structure; very friable; sand grains are coated and bridged with clay; strongly acid.

Solum thickness is more than 60 inches. The subsoil is strongly acid or very strongly acid.

The Ap or A1 horizon is dark grayish brown, brown, gray, or grayish brown. The A2 horizon is light yellowish

brown, pale brown, pale yellow, or very pale brown. The A horizon is sand or loamy sand.

The B2t horizon is yellowish brown, brownish yellow, or strong brown sandy loam or sandy clay loam.

The A'2 horizon is pale yellow, brownish yellow, light yellowish brown, pale brown, very pale brown, or light gray loamy sand or sand.

The B'2t horizon is variable in color and is sandy loam or sandy clay loam.

Aycock series

The Aycock series consists of well drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes range from 0 to 6 percent.

A typical pedon of Aycock very fine sandy loam, 0 to 2 percent slopes, is 0.8 mile west of Pinetops on N.C. Highway 42, 0.6 mile northwest on State Road 1123, 1,000 feet south on farm path, and 385 feet west in field:

Ap—0 to 7 inches; grayish brown (2.5Y 5/2) very fine sandy loam; weak medium granular structure; very friable; many fine roots; slightly acid; abrupt smooth boundary.

A2—7 to 11 inches; light yellowish brown (2.5Y 6/4) very fine sandy loam; weak medium granular structure; very friable; many fine roots; medium acid; clear smooth boundary.

B1—11 to 13 inches; brownish yellow (10YR 6/8) loam; weak fine subangular blocky structure; very friable; many fine roots; very strongly acid; clear smooth boundary.

B21t—13 to 43 inches; yellowish brown (10YR 5/8) clay loam; few fine distinct yellowish red mottles; weak fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; few thin faint patchy clay films on faces of peds; very strongly acid; clear smooth boundary.

B22t—43 to 61 inches; brownish yellow (10YR 6/8) clay loam; common medium distinct yellowish red (5YR 5/8), common medium faint pale brown (10YR 6/3), few medium distinct light gray (l0YR 7/2), and few fine prominent red mottles; weak fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; few thin faint patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B23t—61 to 75 inches; brownish yellow (10YR 6/8) clay loam; many medium and coarse distinct reddish yellow (7.5YR 6/8), common medium prominent red (2.5YR 4/8), and common fine and medium distinct light gray (10YR 7/2) mottles; weak fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; few thin faint patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B3—75 to 90 inches; reddish yellow (7.5YR 6/8) loam; common medium and coarse prominent light gray (10YR 7/2), common fine and medium prominent red (2.5YR 4/8), and common medium faint brownish yellow (10YR 6/8) mottles; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; very strongly acid.

Solum thickness is more than 60 inches. The subsoil is very strongly acid or strongly acid.

The Ap or A1 horizon is grayish brown, dark grayish brown, brown, pale brown, or light yellowish brown. The A2 horizon, where present, is light yellowish brown or pale brown. The A horizon is very fine sandy loam or loam.

The B1 horizon, where present, is yellowish brown or brownish yellow loam or silt loam. The B2t horizon is yellowish brown, brownish yellow, light yellowish brown, or strong brown loam, clay loam, or silty clay loam. The B3 horizon is variable in color and is loam, clay loam, or silty clay loam.

The C horizon is stratified loamy and clayey materials.

Ballahack series

The Ballahack series consists of very poorly drained soils that formed in stratified fluvial sediments. These soils are on stream terraces. Slopes are less than 2 percent.

A typical pedon of Ballahack fine sandy loam is 5.75 miles east of Tarboro on N.C. Highway 44, 0.3 mile west of highway on farm path to canal, 1/4 mile north of path, and 200 feet east of canal, in a pasture:

Ap—0 to 9 inches; very dark gray (10YR 3/1) fine sandy loam; weak medium granular structure; very friable; many fine roots; slightly acid; clear smooth boundary.

A11—9 to 17 inches; very dark gray (10YR 3/1) sandy clay loam; few medium distinct light brownish gray (10YR 6/2) bodies of fine sand; weak medium granular structure; friable; many fine roots; very strongly acid; gradual wavy boundary.

A12—17 to 35 inches; black (10YR 2/1) sandy clay loam; few medium distinct dark grayish brown (10YR 4/2) mottles; massive, parting to weak coarse subangular blocky structure; friable; many fine roots; very strongly acid; clear wavy boundary.

C1g—35 to 49 inches; light brownish gray (10YR 6/2) sandy loam; many large faint dark grayish brown (10YR 4/2) mottles; massive; very friable; common fine and medium opaque grains; very strongly acid; clear wavy boundary.

C2g—49 to 58 inches; dark grayish brown (10YR 4/2) sandy clay; common medium distinct light brownish gray (10YR 6/2) and few fine distinct yellowish brown mottles; many lenses and pockets of loamy

sand; massive; firm; common fine and medium opaque grains; very strongly acid; clear wavy boundary.

C3g—58 to 74 inches; light brownish gray (10YR 6/2) loamy sand; massive; very friable; few fine flakes of mica; common fine and medium grains of feldspar; strongly acid; abrupt wavy boundary.

These soils are strongly acid or very strongly acid in all horizons within 60 inches of the surface, except where limed.

The A horizon is very dark gray or black fine sandy loam or sandy clay loam.

The AC horizon, where present, is dark gray or very dark gray fine sandy loam or loamy sand.

The C horizon is light brownish gray or dark grayish brown sandy loam, sandy clay, loamy sand, or sand.

Bibb series

The Bibb series consists of poorly drained soils that formed in recent alluvium. These soils are on flood plains. Slopes are less than 2 percent.

A typical pedon of Bibb loam from an area of Bibb soils is 9 miles west of Tarboro on State road 1222, 50 feet west of bridge, and 100 feet south of road, in woods:

A1—0 to 8 inches; dark grayish brown (2.5Y 4/2) loam; few fine distinct strong brown and yellowish red organic stains; moderate medium granular structure; friable; many fine and coarse roots; very strongly acid; clear wavy boundary.

ACg—8 to 16 inches; gray (10YR 5/1) loam; common fine distinct reddish brown organic stains; massive, parting to weak medium granular structure; friable; many fine and coarse roots; very strongly acid; clear wavy boundary.

C1g—16 to 23 inches; gray (10YR 5/1) loam; few fine distinct reddish brown organic stains; massive; friable; common fine and medium roots; very strongly acid; clear wavy boundary.

C2g—23 to 38 inches; dark gray (10YR 4/1) loam; few fine distinct reddish brown organic stains; massive; friable; common fine and medium roots; very strongly acid; clear wavy boundary.

C3g—38 to 49 inches; dark gray (10YR 4/1) loamy sand and sandy loam; massive; very friable; many fine and coarse partially decayed roots; very strongly acid; clear wavy boundary.

C4g—49 to 56 inches; very dark gray (10YR 3/1) sandy loam; massive; very friable; many fine and coarse partially decayed roots; very strongly acid; clear wavy boundary.

C5g—56 to 61 inches; very dark grayish brown (10YR 3/2) loamy sand; common medium and coarse prominent light gray (10YR 7/2) streaks of uncoated sand; massive; very friable; many fine and coarse partially decayed roots; very strongly acid; clear wavy boundary.

C6g—61 to 66 inches; grayish brown (10YR 5/2) loamy sand; massive; very friable; few fine and medium roots; very strongly acid.

These soils are strongly acid or very strongly acid throughout, except where limed.

The A horizon is dark gray, dark grayish brown, very dark grayish brown, black, very dark gray, or brown silt loam, sandy loam, or loam. Where the A horizon is very dark grayish brown, very dark gray, or black, it is less than 7 inches thick.

The C horizon is gray, dark gray, very dark gray, very dark grayish brown, or grayish brown loam, loamy sand, sand, sandy loam, or fine sandy loam.

Blanton series

The Blanton series consists of moderately well drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes are 0 to 6 percent.

A typical pedon of Blanton sand, 0 to 6 percent slopes, is 8 miles west of Tarboro on U.S. Highway 64, 0.4 mile west of the intersection of U.S. Highway 64 and State Road 1252 on U.S. Highway 65, and 90 feet north of the road:

A1—0 to 4 inches; dark grayish brown (2.5Y 4/2) sand; single grained; loose; many fine and coarse roots; very strongly acid; clear wavy boundary.

A21—4 to 14 inches; light yellowish brown (2.5Y 6/4) sand; single grained; loose; few fine roots; very strongly acid; gradual wavy boundary.

A22—14 to 47 inches; pale yellow (2.5Y 7/4) sand; single grained; loose; very strongly acid; clear wavy boundary.

A&B—47 to 61 inches; light yellowish brown (10YR 6/4) sand with lamellae of yellowish brown (10YR 5/6) sandy loam about 1/2 inch thick and about 1 inch apart; many medium distinct yellowish red (5YR 5/8) mottles; single grained; lamellae have weak medium subangular blocky structure; loose; lamellae are very friable; very strongly acid; clear wavy boundary.

B21t—61 to 74 inches; brownish yellow (10YR 6/8) sandy loam; many medium faint light yellowish brown (l0YR 6/4) and common medium prominent red (2.5YR 5/8) mottles; weak medium subangular blocky structure; very friable; sand grains are coated and bridged with clay; very strongly acid; clear wavy boundary.

B22t—74 to 83 inches; light brownish gray (10YR 6/2) sandy clay loam; common fine distinct light yellowish brown and brownish yellow and common fine prominent red mottles; weak medium subangular blocky structure; friable; few thin faint patchy clay films on

faces of peds; very strongly acid; gradual wavy boundary.

Solum thickness is more than 60 inches. The subsoil is strongly acid or very strongly acid.

The Ap or A1 horizon is dark grayish brown, grayish brown, or brown. The A2 horizon is very pale brown, yellow, light gray, pale brown, pale yellow, or light yellowish brown. The A horizon is sand or loamy sand.

The B1 horizon, where present, is very pale brown, pale brown, or light yellowish brown. The B21t horizon is pale brown, strong brown, yellowish brown, light yellowish brown, or brownish yellow. The B22t horizon is light brownish gray, brownish yellow, or yellowish brown. The B horizon is sandy loam or sandy clay loam.

Cape Fear series

The Cape Fear series consists of very poorly drained soils that formed in fluvial sediments. These soils are on stream terraces. Slopes are less than 2 percent.

A typical pedon of Cape Fear loam is 4.3 miles east of Tarboro on N.C. Highway 44, 0.3 mile west of junction of N.C. Highway 44 and State Road 1524; 350 feet south of N.C. Highway 44, in woods:

O1—3 to 2 inches; leaves, pine needles, and miscellaneous organic matter.

O2—2 inches to 0; dark reddish brown (5YR 2/2) partially decomposed organic matter.

A1—0 to 15 inches; black (10YR 2/1) loam; weak and moderate medium granular structure; friable; many fine and coarse roots; very strongly acid; clear irregular boundary.

B1g—15 to 18 inches; dark gray (10YR 4/1) clay loam; common medium faint gray (10YR 6/1) mottles; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; common fine and medium roots; very strongly acid; clear wavy boundary.

B21tg—18 to 33 inches; dark gray (10YR 4/1) clay; few fine prominent strong brown mottles; moderate medium angular blocky structure; very firm, sticky, very plastic; common fine and medium roots; few thin faint patchy clay films on faces of peds and coating pores; common fine and medium pores; very strongly acid; gradual wavy boundary.

B22tg—33 to 45 inches; dark gray (10YR 4/1) clay; common medium faint gray (10YR 6/1) and few fine prominent strong brown mottles; moderate medium subangular blocky structure; very firm, sticky, plastic; common fine and medium roots; few thin faint patchy clay films on faces of peds and coating pores; common thin lenses of loamy sand; very strongly acid; gradual wavy boundary.

B3g—45 to 65 inches; grayish brown (10YR 5/2) sandy clay loam; few fine prominent strong brown mottles; massive, parting to weak medium subangular blocky structure; friable; common fine and medium roots; common pockets and lenses of sandy loam, loamy sand, and sand; very strongly acid; gradual wavy boundary.

IIC—65 to 80 inches; dark grayish brown (10YR 4/2) sand; single grained; loose; few fine roots; few fine flakes of mica; strongly acid.

Solum thickness ranges from 36 to more than 60 inches. The subsoil is dominantly very strongly acid or strongly acid but ranges to medium acid.

The Ap or A1 horizon is black or very dark gray loam, fine sandy loam, or silt loam.

The B1g horizon, where present, is very dark gray or dark gray clay loam or sandy clay loam. The B2tg horizon is dark gray, gray, or light gray clay, sandy clay, or clay loam. The B3g horizon is gray, dark gray, grayish brown, or light brownish gray sandy clay loam or clay loam.

The IIC horizon is dark grayish brown or grayish brown sand or loamy sand.

Chewacla series

The Chewacla series consists of somewhat poorly drained soils that formed in recent alluvium. These soils are on flood plains. Slopes range from 0 to 2 percent.

A typical pedon of Chewacla silt loam is 0.4 mile north of Heartsease on State Road 1252, 450 feet west of Dunbar bridge, and 300 feet northwest of Tar River, in woods:

O1—1 inch to 0; fresh and slightly decayed organic litter.

A1—0 to 16 inches; brown (10YR 4/3) silt loam; moderate medium granular structure; friable; many fine to coarse roots; common fine flakes of mica; very strongly acid; clear wavy boundary.

B21—16 to 27 inches; brown (10YR 5/3) clay loam; many medium faint dark yellowish brown (10YR 4/4) and light gray (10YR 7/2) mottles; common medium distinct dark brown (7.5YR 3/2) and few medium prominent black (N 2/0) streaks and bodies of organic material occurring irregularly with depth; weak medium subangular blocky structure; friable; common fine and medium roots; common fine flakes of mica; very strongly acid; gradual wavy boundary.

B22g—27 to 99 inches; gray (10YR 6/1) clay loam; many medium faint pale brown (10YR 6/3) and many medium and coarse prominent strong brown (7.5YR 5/8) mottles; common medium distinct dark brown (7.5YR 3/2) and few medium prominent black (N 2/0) streaks and bodies of organic material occurring irregularly with depth; weak coarse subangular blocky structure; friable; common fine and medium roots; common fine flakes of mica; very strongly acid.

Solum thickness ranges from 36 to more than 72 inches. The subsoil is dominantly strongly acid or very strongly acid but ranges to slightly acid.

The A1 or Ap horizon is brown or dark grayish brown silt loam or loam.

The B1 horizon, where present, is brown or light yellowish brown. The B2l horizon is brown or yellowish brown. The B22 horizon is gray or light brownish gray. The B horizon is clay loam, sandy loam, silt loam, or loam.

The C horizon, where present is within a depth of 80 inches. It is similar in color to the B2 horizon but is more variable in texture, ranging from sand to loam.

Chewacla soils as mapped in Edgecombe County are taxadjuncts to the Chewacla series. They have a slightly lower content of fine and coarser sand than defined in the range for the Chewacla series. Use, management, and behavior, however, are the same as for the Chewacla series.

Conetoe series

The Conetoe series consists of well drained soils that formed in fluvial sediments. These soils are on stream terraces. Slopes are 0 to 4 percent.

A typical pedon of Conetoe loamy sand, 0 to 4 percent slopes, is 1.1 miles northwest of Conetoe on U.S. Highway 64, 1/4 mile north on State Road 1524 to path, 450 feet west on path, and 200 feet south in field:

Ap—0 to 8 inches; grayish brown (10YR 5/2) loamy sand; weak medium granular structure; very friable; many fine and medium roots; medium acid; abrupt smooth boundary.

A2—8 to 25 inches; light yellowish brown (10YR 6/4) loamy sand; weak medium granular structure; very friable; common fine roots; medium acid; clear wavy boundary.

B21t—25 to 28 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; very friable; few fine roots; sand grains are coated and bridged with clay; very strongly acid; clear wavy boundary.

B22t—28 to 41 inches; strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; very friable; few fine roots; sand grains coated and bridged with clay; few fine and medium uncoated grains; very strongly acid; gradual wavy boundary.

B3—41 to 48 inches; strong brown (7.5YR 5/6) loamy sand; weak medium granular structure; very friable; sand grains coated and bridged with clay; few fine and medium opaque grains; very strongly acid; gradual wavy boundary.

C1—48 to 57 inches; reddish yellow (7.5YR 6/8) sand; single grained; loose; common medium opaque grains; very strongly acid; gradual wavy boundary.

C2—57 to 90 inches; very pale brown (10YR 7/4) sand; common coarse faint white (10YR 8/2) streaks; single grained; loose; common medium opaque grains; medium acid.

Solum thickness ranges from 36 to 60 inches. The subsoil ranges from very strongly acid to medium acid.

The Ap or A1 horizon is dark grayish brown, grayish brown, or brown. The A2 horizon is light yellowish brown, very pale brown, pale brown, pale yellow, yellow, brownish yellow, or yellowish brown. The A horizon is loamy sand or sand.

The B horizon is strong brown, yellowish brown, reddish yellow, or brownish yellow. The B1 horizon is sandy loam or loamy sand. The B2t horizon is typically sandy loam. The B3 horizon is sandy loam or loamy sand.

The C horizon is reddish yellow to very pale brown loamy sand or sand.

Congaree series

The Congaree series consists of well drained soils that formed in recent alluvium. These soils are on flood plains. Slopes are 0 to 2 percent.

A typical pedon of Congaree silt loam is 0.5 mile north of Tarboro on N.C. Highway 44, 150 feet north of the Tar River, and 75 feet east of Highway:

O2—1 inch to 0; dark brown (10YR 3/3) partially decomposed organic matter.

A1—0 to 7 inches; brown (10YR 4/3) silt loam; weak fine and medium granular structure; friable; many fine, medium, and coarse roots; common fine and very fine flakes of mica; medium acid; clear wavy boundary.

C1—7 to 42 inches; dark yellowish brown (10YR 4/4) silty clay loam; few medium faint yellowish brown (10YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; common fine roots; common fine and medium black concretions; common fine and very fine flakes of mica; very strongly acid; gradual wavy boundary.

C2—42 to 47 inches; strong brown (7.5YR 5/6) fine sandy loam; massive, parting to weak medium subangular blocky structure; very friable; few fine and medium black concretions; common fine flakes of mica; very strongly acid; gradual wavy boundary.

C3—47 to 67 inches; brownish yellow (10YR 6/6) fine sand; many medium distinct very pale brown streaks of uncoated sand; single grained; loose; common fine flakes of mica; very strongly acid; clear wavy boundary.

C4—67 to 79 inches; strong brown (7.5YR 5/6) fine sandy loam; common medium faint brown (7.5YR 4/4) and few medium distinct very pale brown (10YR 7/4) mottles; massive; very friable; common fine

flakes of mica; very strongly acid; clear wavy boundary.

C5—79 to 93 inches; very pale brown (10YR 7/3) fine sand; common medium faint white streaks of uncoated sand; single grained; loose; few fine flakes of mica; very strongly acid.

These soils are dominantly strongly acid or very strongly acid throughout except where limed. Reaction ranges to neutral.

The A1 horizon is brown or dark grayish brown silt loam or loam.

The C horizon is brown, dark yellowish brown, yellowish brown, strong brown, brownish yellow, or very pale brown silt loam, silty clay loam, fine sandy loam, or fine sand.

Congaree soils as mapped in Edgecombe County are taxadjuncts to the Congaree series. They have a slightly lower content of fine and coarser sand than defined in the range for the Congaree series and slightly more clay. Use, management, and behavior, however, are the same as for the Congaree series.

Coxville series

The Coxville series consists of poorly drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes are 0 to 2 percent.

A typical pedon of Coxville sandy loam is 3 miles southeast of Rocky Mount on N.C. Highway 43, 0.5 mile north on State Road 1230, 200 feet east of road, and 10 feet north of woods, in a field:

Ap—0 to 7 inches; dark gray (10YR 4/1) sandy loam; weak medium granular structure; very friable; many fine and medium roots; very strongly acid; abrupt smooth boundary.

B1g—7 to 13 inches; light brownish gray (2.5Y 6/2) sandy clay loam; common medium distinct yellowish brown (10YR 5/8) and few fine distinct brownish yellow mottles; weak medium subangular blocky structure; friable; few fine roots; very strongly acid; clear wavy boundary.

B21tg—13 to 23 inches; gray (10YR 6/1) sandy clay; common medium prominent reddish yellow (7.5YR 6/8), common medium faint light yellowish brown (10YR 6/4), and few fine prominent red mottles; weak medium subangular blocky structure; firm, sticky, plastic; few fine roots; very strongly acid; clear wavy boundary.

B22tg—23 to 46 inches; gray (10YR 6/1) sandy clay; many coarse prominent strong brown (7.5YR 5/6) and common medium prominent red (2.5YR 4/8) mottles; weak medium subangular blocky structure; firm, sticky, plastic; very strongly acid; gradual wavy boundary.

B23tg—46 to 69 inches; gray (10YR 6/1) clay; common medium prominent strong brown (7.5YR 5/8) and common fine prominent red mottles; weak medium subangular blocky structure becoming more massive with depth; very firm, sticky, plastic; very strongly acid; clear wavy boundary.

Cg—69 to 85 inches; light gray (10YR 7/1) sandy clay; common coarse distinct brownish yellow (10YR 6/8) and few fine prominent red mottles; massive; firm; very strongly acid.

Solum thickness ranges from 60 to about 80 inches. The subsoil is strongly acid or very strongly acid.

The Ap or A1 horizon is dark gray or very dark gray. The A2 horizon, where present, is gray, light gray, or light brownish gray. The A horizon is sandy loam, loam, or fine sandy loam.

The B1g horizon, where present, is gray or light brownish gray sandy clay loam, loam, or clay loam. The B2tg horizon is gray or dark gray sandy clay, clay loam, or clay. The B3g horizon is similar in color to the B2tg horizon and is sandy clay loam, sandy clay, clay loam, or clay.

The Cg horizon is light gray or gray sandy loam, sandy clay, or clay.

Dogue series

The Dogue series consists of moderately well drained soils that formed in fluvial sediments. These soils are on stream terraces. Slope is 0 to 3 percent.

A typical pedon of Dogue fine sandy loam, 0 to 3 percent slopes, is 1 mile east of Conetoe on N.C. Highway 42, 0.6 mile south on path, and 25 feet east of path:

Ap—0 to 7 inches; brown (10YR 5/3) fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; medium acid; abrupt smooth boundary.

B21t—7 to 23 inches; brownish yellow (10YR 6/6) clay; common medium faint strong brown (7.5YR 5/6) and common fine and medium prominent red (2.5YR 4/8) mottles; moderate coarse prismatic primary structure parting to moderate medium angular blocky; very firm, sticky, plastic; few fine roots; few fine grains of feldspar and dark minerals; few fine flakes of mica; common thick distinct discontinuous clay films on faces of peds; very strongly acid; gradual wavy boundary.

B22t—23 to 31 inches; brownish yellow (10YR 6/6) clay; common medium prominent red (2.5YR 4/8), common medium faint strong brown (7.5YR 5/8), and common fine distinct light gray mottles; moderate coarse prismatic primary structure parting to moderate medium angular blocky; very firm, sticky, plastic; few fine grains of feldspar and dark minerals; few fine flakes of mica; common thick distinct dis-

continuous clay films on faces of peds; very strongly acid; gradual wavy boundary.

B23tg—31 to 55 inches; gray (10YR 6/1) clay; common medium prominent reddish yellow (7.5YR 6/8), few medium faint very pale brown (l0YR 7/3), and few fine prominent red mottles; weak coarse prismatic primary structure parting to moderate medium angular blocky; very firm, sticky, plastic; few fine grains of feldspar and dark minerals; few fine flakes of mica; common thick distinct discontinuous clay films on faces of peds; very strongly acid; gradual wavy boundary.

B3g—55 to 66 inches; light gray (10YR 7/1) sandy clay loam; common medium faint very pale brown (10YR 7/3) and few fine distinct brownish yellow mottles; weak medium subangular blocky structure; friable; common fine grains of feldspar and dark minerals; common fine flakes of mica; very strongly acid; gradual wavy boundary.

IICg—66 to 80 inches; light gray (10YR 7/1) sandy loam; common medium distinct brownish yellow (10YR 6/8) and yellow (2.5Y 8/6) mottles; massive; very friable; common fine grains of feldspar and dark minerals; common fine flakes of mica; very strongly acid.

Solum thickness ranges from 40 to 60 inches or more. The subsoil is dominantly very strongly acid or strongly acid but ranges to extremely acid.

The Ap or A1 horizon is brown, dark grayish brown, or grayish brown. The A2 horizon, where present, is very pale brown, light yellowish brown, or brownish yellow. The A horizon is fine sandy loam, loam, or silt loam.

The B1 horizon, where present, is brownish yellow, light yellowish brown, or yellowish brown sandy clay loam or clay loam. The B2t horizon is light yellowish brown, yellowish brown, brownish yellow, or strong brown. The lower part has gray mottles or is dominantly gray or light gray. The B2t horizon is clay or clay loam. The B3 horizon is gray or light gray clay loam, sandy clay loam, sandy clay, clay, or sandy loam.

The C horizon is gray or light gray sandy loam or sandy clay loam.

Duplin series

The Duplin series consists of moderately well drained soils that formed in Coastal Plain sediments. These soils are on the uplands. Slopes range from 0 to 5 percent.

A typical pedon of Duplin sandy loam, 2 to 5 percent slopes, is 11 miles southwest of Tarboro, 1.3 miles west of N.C. Highway 43 on State Road 1232, and 150 feet north of road, in a field:

Ap—0 to 5 inches; brown (10YR 5/3) sandy loam; weak medium granular structure; very friable; many fine and medium roots; medium acid; abrupt smooth boundary.

B1—5 to 7 inches; brownish yellow (10YR 6/6) clay loam; few fine distinct strong brown mottles; weak medium subangular blocky structure; firm; common fine roots; very strongly acid; clear wavy boundary.

B21t—7 to 24 inches; yellowish brown (10YR 5/4) clay; common medium and fine prominent red (2.5YR 4/8), common fine distinct yellowish red, and few fine faint pale brown mottles; moderate medium angular blocky structure; very firm, sticky, plastic; few fine roots; common thick distinct discontinuous clay films on faces of peds and coating large pores; very strongly acid; gradual wavy boundary.

B22t—24 to 42 inches; light yellowish brown (10YR 6/4) clay; common medium prominent red (2.5YR 4/8) and yellowish red (5YR 5/8) and common medium distinct gray (10YR 6/1) mottles; weak medium angular blocky structure; very firm, sticky, plastic; few thin faint patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B23t—42 to 90 inches; gray (10YR 6/1) clay; common medium prominent strong brown (7.5YR 5/6), few fine prominent red and yellowish red, and few medium faint pale brown (10YR 6/3) mottles; weak medium angular blocky structure; very firm, sticky, plastic; very strongly acid.

Solum thickness is more than 60 inches. Reaction of the subsoil is strongly acid or very strongly acid.

The Ap or A1 horizon is dark grayish brown, brown, or grayish brown sandy loam, loamy sand, or fine sandy loam. The A2 horizon, where present, is light yellowish brown, pale brown, or brown sandy loam or fine sandy loam.

The B1 horizon is brownish yellow, yellowish brown, or light yellowish brown clay loam or sandy clay loam. The B2lt and B22t horizons are strong brown, yellow, light yellowish brown, pale brown, reddish yellow, very pale brown, yellowish brown, or brownish yellow. The B23t horizon has similar colors or is mottled or gray. The B3 horizon, where present, is similar in color to the lower part of the B2t horizon and is sandy clay, clay loam, or sandy clay loam.

Exum series

The Exum series consists of moderately well drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes are 0 to 2 percent.

A typical pedon of Exum very fine sandy loam, 0 to 2 percent slopes, is 5.5 miles west of Tarboro on State Road 1208, 780 feet south on State Road 1217, and 270 feet east in field:

Ap—0 to 7 inches; grayish brown (10YR 5/2) very fine sandy loam; weak medium granular structure; very

friable; many fine and medium roots; medium acid; abrupt smooth boundary.

A2—7 to 14 inches; light yellowish brown (10YR 6/4) very fine sandy loam; weak medium granular structure; very friable; common roots; strongly acid; clear wavy boundary.

B21t—14 to 23 inches; brownish yellow (10YR 6/6) loam; common medium faint yellowish brown (10YR 5/8) mottles; weak fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; few thin faint patchy clay films on faces of peds; very strongly acid; clear smooth boundary.

B22t—23 to 45 inches; brownish yellow (10YR 6/8) clay loam; common medium distinct light gray (10YR 7/2), many medium faint pale brown (10YR 6/3), and few medium faint strong brown (7.5YR 5/8) mottles; weak fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; few thin faint patchy clay films on faces of peds; very strongly acid; gradual smooth boundary.

B23t—45 to 67 inches; brownish yellow (10YR 6/8) clay loam; common medium distinct light gray (10YR 7/1) and red (2.5YR 4/8) mottles; weak fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; few thin faint patchy clay films on faces of peds; very strongly acid; gradual smooth boundary.

B3—67 to 91 inches; mottled light gray (10YR 7/2), brownish yellow (10YR 6/8), and red (2.5YR 5/8) clay loam; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; very strongly acid; clear wavy boundary.

Solum thickness ranges from 60 to more than 90 inches. The B horizon is strongly acid or very strongly acid.

The Ap or A1 horizon is grayish brown or dark grayish brown. The A2 horizon is light yellowish brown, light brownish gray, very pale brown, or pale brown. The A horizon is very fine sandy loam, loam, or silt loam.

The B1 horizon, where present, is yellowish brown, light yellowish brown, or brownish yellow loam or clay loam. The B2t horizon is brownish yellow, yellowish brown, light yellowish brown, or pale brown clay loam or loam. The B3 horizon is mottled light gray, brownish yellow, red, yellowish red, or brown loam, fine sandy clay loam, clay loam, or clay.

Foreston series

The Foreston series consists of moderately well drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes range from 0 to 2 percent.

A typical pedon of Foreston loamy sand, 0 to 2 percent slopes, is 1.6 miles north of Fountain on U.S. Highway 258, 1,000 feet east of highway on farm path, and 135 feet north of path, in a field:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) loamy sand; weak fine and medium granular structure; very friable; many fine and medium roots; medium acid; abrupt smooth boundary.

A2—7 to 11 inches; brownish yellow (10YR 6/6) loamy sand; weak medium granular structure; very friable; few fine roots; strongly acid; clear wavy boundary.

B1—11 to 15 inches; brownish yellow (10YR 6/6) sandy loam; weak fine and medium subangular blocky structure; very friable; few fine roots; very strongly acid; clear smooth boundary.

B21t—15 to 27 inches; brownish yellow (10YR 6/6) sandy loam; common medium distinct reddish yellow (7.5YR 6/8) and few medium distinct yellowish red (5YR 5/8) mottles; weak fine and medium subangular blocky structure; very friable; very strongly acid; clear smooth boundary.

B22t—27 to 38 inches; brownish yellow (10YR 6/6) sandy loam; many medium faint light yellowish brown (10YR 6/4) and common medium distinct light brownish gray (2.5YR 6/2) and reddish yellow (7.5YR 6/8) mottles; weak fine and medium subangular blocky structure; very friable; very strongly acid; clear smooth boundary.

B31—38 to 58 inches; light yellowish brown (10YR 6/4) sandy loam with pockets of loamy sand; common medium distinct reddish yellow (5YR 6/6) and faint light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; very friable; very strongly acid; clear smooth boundary.

B32—58 to 66 inches; light brownish gray (10YR 6/2) loamy sand with few pockets of clean sand; common medium distinct brownish yellow (10YR 6/6) mottles; massive; very friable; very strongly acid; clear smooth boundary.

C—66 to 72 inches; light gray (10YR 7/1) loamy sand with few pockets of clean sand; common medium distinct light yellowish brown (10YR 6/4) mottles; massive; very friable; very strongly acid.

Solum thickness is 60 to more than 80 inches. The subsoil is strongly acid or very strongly acid except where limed.

The Ap or A1 horizon is dark grayish brown or very dark grayish brown. The A2 horizon is light yellowish brown or brownish yellow. The A horizon is loamy sand or loamy fine sand.

The B1 and B2t horizons are brownish yellow, yellowish brown, or light yellowish brown sandy loam or fine sandy loam. The B3 horizon is light yellowish brown, brownish yellow, pale brown, very pale brown, light gray, or light brownish gray sandy loam, fine sandy loam, loamy fine sand, or loamy sand.

The C horizon is grayish, stratified sandy and loamy materials that are mottled in shades of red, yellow, or brown.

Goldsboro series

The Goldsboro series consists of moderately well drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes are 0 to 2 percent.

A typical pedon of Goldsboro fine sandy loam, 0 to 2 percent slopes, is 4.2 miles southwest of Oak City on N.C. Highway 44 and 75 feet east of highway, in a field:

Ap—0 to 7 inches; dark grayish brown (2.5Y 4/2) fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; slightly acid; abrupt smooth boundary.

A2—7 to 12 inches; light yellowish brown (2.5Y 6/4) fine sandy loam; weak medium granular structure; very friable; common fine roots; very strongly acid; clear wavy boundary.

B1—12 to 15 inches; brownish yellow (10YR 6/6) fine sandy loam; weak fine and medium subangular blocky structure; very friable; few fine roots; very strongly acid; clear wavy boundary.

B21t—15 to 24 inches; brownish yellow (10YR 6/8) sandy clay loam; common medium distinct strong brown (7.5YR 5/8) and few fine faint pale brown mottles; weak fine and medium subangular blocky structure; friable; few fine roots; very strongly acid; clear smooth boundary.

B22t—24 to 38 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct gray (10YR 6/1) and reddish yellow (7.5YR 6/8) and few fine distinct yellowish red mottles; weak medium subangular blocky structure; friable; very strongly acid; gradual smooth boundary.

B23t—38 to 54 inches; mottled gray (10YR 6/1), brownish yellow (10YR 6/6), strong brown (7.5YR 5/8), and yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; very strongly acid; gradual smooth boundary.

B24tg—54 to 82 inches; gray (10YR 6/1) sandy clay loam; common medium faint very pale brown (10YR 7/3) and few medium prominent reddish yellow (7.5YR 6/8) mottles; weak medium and coarse subangular blocky structure grading to massive in the lower part; friable; very strongly acid; diffuse smooth boundary.

Solum thickness is commonly 60 to 80 inches and ranges to l00 inches or more in some pedons. The subsoil is strongly acid or very strongly acid.

The Ap or A1 horizon is grayish brown, dark grayish brown, gray, or dark gray. The A2 horizon is light yellowish brown, pale brown, or very pale brown. The A horizon is fine sandy loam, sandy loam, loamy fine sand, or loamy sand.

The B1 horizon, where present, is brownish yellow, light yellowish brown, yellowish brown, or pale brown fine sandy loam or sandy loam. The B2lt and B22t horizons are brownish yellow, yellowish brown, or pale brown. The B23t horizon is mottled gray, brownish yellow, strong brown, or yellowish red. The B3 horizon is gray, light brownish gray, or grayish brown. The B2t and B3 horizons are sandy clay loam or sandy loam.

Grantham series

The Grantham series consists of poorly drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes are 0 to 2 percent.

A typical pedon of Grantham very fine sandy loam is 1.5 miles west of Pinetops on N.C. Highway 42, 0.4 mile west on State Road 1124, and 800 feet north of road, in woods:

O1—3 inches to 1 inch; undecomposed deciduous needleleaf litter.

O2—1 inch to 0; dark brown (7.5YR 3/2) partially decomposed organic matter.

A1—0 to 6 inches; dark gray (10YR 4/1) very fine sandy loam; weak medium granular structure; very friable; many fine and coarse roots; very strongly acid; abrupt irregular boundary.

A2g—6 to 11 inches; light brownish gray (10YR 6/2) very fine sandy loam; weak medium granular structure; very friable; common fine and medium roots; strongly acid; clear wavy boundary.

B1g—11 to 13 inches; gray (10YR 6/1) loam; few fine distinct yellowish brown mottles; weak medium subangular blocky structure; friable; common fine roots; very strongly acid; clear wavy boundary.

B2ltg—13 to 36 inches; gray (10YR 6/1) loam; common medium faint gray (10YR 5/1), common medium distinct brownish yellow (10YR 6/6), and common fine and medium prominent strong brown (7.5YR 5/6) mottles; weak fine and medium subangular blocky structure; friable; few fine roots; few thin faint patchy clay films and silt coatings on faces of peds; very strongly acid; gradual wavy boundary.

B22tg—36 to 58 inches; gray (10YR 6/1) loam; common medium prominent strong brown (7.5YR 5/8), common medium distinct brownish yellow (10YR 6/6), and few fine prominent red mottles; weak medium subangular blocky structure; friable; few thin faint patchy clay films and silt coatings on faces of peds; very strongly acid; gradual wavy boundary.

B23tg—58 to 77 inches; gray (10YR 6/1) clay loam; common medium prominent reddish yellow (7.5YR 6/8), common fine and medium prominent strong brown (7.5YR 5/6), common medium faint gray (10YR 5/1), and few fine prominent red mottles;

weak medium and coarse subangular blocky structure; firm; very strongly acid; gradual wavy boundary.

B3g—77 to 95 inches; gray (10YR 6/1) clay loam; common medium prominent strong brown (7.5YR 5/6) and common medium distinct brownish yellow (10YR 6/8) mottles; massive; friable; very strongly acid; gradual wavy boundary.

Cg—95 to 110 inches; light gray (10YR 7/1) loam; many coarse faint gray (10YR 6/1) and few fine prominent strong brown mottles; massive; friable; very strongly acid.

Solum thickness is more than 60 inches. The subsoil is strongly acid or very strongly acid.

The Ap or A1 horizon is very dark gray, dark gray, or dark grayish brown. The A2 horizon, where present, is gray, light brownish gray, or light gray. The A horizon is very fine sandy loam, loam, or silt loam.

The B1 horizon, where present, is gray or light brownish gray loam or silt loam. The B2t horizon is gray or light brownish gray loam or clay loam. The B3 horizon is gray or light brownish gray clay loam or loam.

The C horizon is gray, light gray, or light brownish gray clay loam or loam.

Gritney series

The Gritney series consists of well drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes range from 6 to 15 percent.

A typical pedon of Gritney fine sandy loam, 6 to 10 percent slopes, is 1/8 mile north of intersection of State Roads 1136 and 1135 on State Road 1135, and 75 feet east of road:

Ap—0 to 5 inches; brown (10YR 5/3) fine sandy loam; weak medium granular structure; very friable; common fine roots; strongly acid; abrupt smooth boundary.

B21t—5 to 11 inches; reddish yellow (7.5YR 6/6) clay; common coarse faint yellowish brown (10YR 5/4) and brownish yellow (10YR 6/6) and few fine distinct yellowish red mottles; weak medium subangular blocky structure; very firm, sticky, plastic; common fine roots; few thin faint patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B22t—11 to 24 inches; brownish yellow (10YR 6/6) clay; common medium distinct reddish gray (5YR 5/2), common fine distinct gray, and few fine prominent reddish brown and yellowish red mottles; weak medium subangular blocky structure; very firm, sticky, plastic; few fine roots; few thin faint patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B31—24 to 32 inches; mottled yellowish red (5YR 5/8), strong brown (7.5YR 5/8), gray (10YR 6/1), and reddish gray (5YR 5/2) clay; weak medium subangular blocky structure; very firm, sticky, plastic; few thin faint patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B32—32 to 50 inches; mottled red (10R 4/8), weak red (10R 5/2), gray (10YR 6/1), and yellowish brown (10YR 5/8) clay; massive; very firm, sticky, plastic; very strongly acid; clear wavy boundary.

IIC—50 to 60 inches; mottled red (2.5YR 4/8), gray (10YR 6/1), weak red (2.5YR 4/2), and yellow (10YR 7/6) sandy clay loam; massive; friable; very strongly acid.

Solum thickness ranges from 40 to 72 inches. The B horizon is very strongly acid or strongly acid.

The Ap or A1 horizon is dark grayish brown or brown fine sandy loam or sandy loam. The A2 horizon, where present, is light yellowish brown or pale brown fine sandy loam or sandy loam.

The B2t horizon is reddish yellow, brownish yellow, red, strong brown, yellowish red, or yellowish brown clay, sandy clay, or clay loam. The B3 horizon is variable in texture, ranging from clay to sandy loam.

The C horizon is similar in color to the B3 horizon and is variable in texture, ranging from sand to clay.

Johns series

The Johns series consists of somewhat poorly drained to moderately well drained soils that formed in fluvial sediments. These soils are on stream terraces. Slopes are 0 to 2 percent.

A typical pedon of Johns fine sandy loam is 9 miles west of Tarboro, 0.7 mile south of the intersection of State Roads 1224 and 1223 on State Road 1223, and 70 feet west in pasture:

Ap—0 to 8 inches; grayish brown (10YR 5/2) fine sandy loam; weak fine and medium granular structure; very friable; many fine and medium roots; slightly acid; abrupt smooth boundary.

A2—8 to 13 inches; light yellowish brown (10YR 6/4) fine sandy loam; weak medium granular structure; very friable; common fine roots; medium acid; clear wavy boundary.

B21t—13 to 23 inches; yellowish brown (10YR 5/6) sandy clay loam; common fine and medium faint strong brown (7.5YR 5/6) and common medium faint light yellowish brown (10YR 6/4) mottles; weak fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; very thin faint patchy clay films on faces of peds; very strongly acid; clear smooth boundary.

B22t—23 to 29 inches; light yellowish brown (10YR 6/4) sandy clay loam; common medium distinct light brownish gray (10YR 6/2), gray (10YR 6/1), and strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable, slightly sticky,

slightly plastic; few thin patchy clay films on faces of peds; very strongly acid; clear wavy boundary.

B3—29 to 34 inches; light yellowish brown (10YR 6/4) sandy loam; common medium distinct gray (10YR 6/1) and few fine distinct strong brown mottles; weak medium subangular blocky structure; very friable; very strongly acid; gradual wavy boundary.

IIC1—34 to 48 inches; light yellowish brown (10YR 6/4) loamy sand; common medium distinct gray (10YR 6/1) and few fine distinct strong brown mottles; massive; very friable; very strongly acid; clear smooth boundary.

IIC2—48 to 70 inches; light yellowish brown (10YR 6/4) loamy coarse sand; common medium distinct light brownish gray (10YR 6/2) and strong brown (7.5YR 5/8) mottles; massive; very friable; very strongly acid.

Solum thickness ranges from 20 to 40 inches. The subsoil is strongly acid or very strongly acid except where limed.

The Ap or A1 horizon is gray, grayish brown, dark gray, or dark grayish brown. The A2 horizon is light yellowish brown, pale brown, very pale brown, or pale yellow. The A horizon is fine sandy loam, sandy loam, loamy fine sand, or loamy sand.

The B horizon is light yellowish brown, brownish yellow, or yellowish brown sandy clay loam or sandy loam.

The C horizon is light yellowish brown or yellowish brown loamy sand, loamy coarse sand, or sand.

Johnston series

The Johnston series consists of very poorly drained soils that formed in fluvial sediments. These soils are on flood plains. Slopes are 0 to 2 percent.

A typical pedon of Johnston mucky loam from an area of Johnston soils is 1.5 miles west of Tarboro on State Road 1208, 0.5 mile south on farm path, and 350 feet west of path, in woods:

A1—0 to 29 inches; black (10YR 2/1) mucky loam; weak medium granular structure grading to massive in the lower part; very friable; many fine and coarse roots; very strongly acid; clear irregular boundary.

AC—29 to 40 inches; dark gray (10YR 4/1) fine sandy loam; common pockets and lenses of black (10YR 2/1) fine sandy loam; massive; very friable; many fine and coarse roots; strongly acid; gradual wavy boundary.

Cg—40 to 60 inches; light brownish gray (10YR 6/2) loamy sand; common coarse and medium distinct very dark gray (10YR 3/1) mottles; massive; very friable; strongly acid.

This soil is very strongly acid or strongly acid throughout, except where limed.

The A1 horizon is black or very dark gray mucky loam, loam, or fine sandy loam. The AC horizon, where present, is dark gray or dark grayish brown fine sandy loam, sandy loam, or loam.

The C horizon is light brownish gray, gray, or dark gray loamy sand, sand, or fine sandy loam.

Kenansville series

The Kenansville series consists of well drained soils that formed in Coastal Plain sediments. These soils are on stream terraces. Slopes are 0 to 4 percent.

A typical pedon of Kenansville loamy sand, 0 to 4 percent slopes, is 0.7 mile northeast of Pinetops to the East Carolina Railway crossing of State Road 1201, 4,000 feet north on farm lane, and 75 feet west in a field:

Ap—0 to 8 inches; dark grayish brown (2.5Y 4/2) loamy sand; weak medium granular structure; very friable; many fine and medium roots; medium acid; abrupt smooth boundary.

A2—8 to 25 inches; light yellowish brown (2.5Y 6/4) loamy sand; weak medium granular structure; very friable; common fine and medium roots; common clean sand grains; strongly acid; clear wavy boundary.

B2t—25 to 36 inches; strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; very friable; few fine roots; very strongly acid; gradual wavy boundary.

B3—36 to 48 inches; brownish yellow (10YR 6/6) loamy sand; weak medium granular structure; very friable; very strongly acid; clear wavy boundary.

Cl—48 to 80 inches; brownish yellow (10YR 6/6) loamy sand with pockets of clean sand; massive; very friable; very strongly acid; abrupt smooth boundary.

C2—80 to 90 inches; white (10YR 8/l) sand; few medium distinct brownish yellow (l0YR 6/6) mottles; single grained; loose; very strongly acid.

Solum thickness ranges from 40 to 60 inches. The B horizon is dominantly very strongly acid or strongly acid but ranges to medium acid.

The Ap or A1 horizon is dark grayish brown, grayish brown, or brown. The A2 horizon is light yellowish brown, very pale brown, or pale brown. The A horizon is loamy sand or loamy fine sand.

The B2 horizon is strong brown, brownish yellow, yellowish brown, or light yellowish brown sandy loam or fine sandy loam. The B3 horizon is yellowish brown or brownish yellow loamy sand or sand.

The C horizon is brownish yellow, yellowish brown, very pale brown, light gray, or white loamy sand or sand.

Lumbee series

The Lumbee series consists of poorly drained soils that formed in fluvial sediments. These soils are on stream terraces. Slopes are 0 to 2 percent.

A typical pedon of Lumbee fine sandy loam is 2 miles west of the Coastal Plain Research Station on State Road 1224, 2,200 feet south on path, and 700 feet east in field:

Ap—0 to 8 inches; dark grayish brown (2.5Y 4/2) fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; strongly acid; abrupt smooth boundary.

A2—8 to 12 inches; light gray (10YR 7/2) fine sandy loam; common fine distinct brownish yellow mottles; weak medium granular structure; very friable; few fine roots; very strongly acid; abrupt wavy boundary.

B2tg—12 to 28 inches; gray (10YR 6/1) sandy clay loam; common medium distinct pale yellow (2.5Y 7/4) and common fine and medium prominent reddish yellow (7.5YR 6/8) mottles; weak medium subangular blocky structure; friable; few fine roots; very strongly acid; clear wavy boundary.

B3g—28 to 33 inches; light gray (10YR 7/1) sandy loam; few fine distinct yellowish brown mottles; weak medium subangular blocky structure; very friable; very strongly acid; abrupt wavy boundary.

IIC1—33 to 43 inches; white (10YR 8/1) sand; single grained; loose; very strongly acid; clear wavy boundary.

IIC2—43 to 60 inches; white (10YR 8/1) coarse sand; single grained; loose; very strongly acid.

Solum thickness ranges from 20 to 40 inches. The subsoil is very strongly acid or strongly acid.

The Ap or A1 horizon is dark grayish brown, dark gray, gray, very dark gray, or very dark grayish brown. The dark grayish brown or very dark gray Ap or A1 horizon is less than 10 inches thick. The A2 horizon is light gray, gray, or light brownish gray. The A horizon is fine sandy loam, sandy loam, or loamy sand.

The Bt horizon is gray, light gray, light brownish gray, or grayish brown sandy clay loam or sandy loam.

The C horizon is gray, light gray, or white fine sand, sand, coarse sand, or loamy sand.

Lynchburg series

The Lynchburg series consists of somewhat poorly drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes are 0 to 2 percent.

A typical pedon of Lynchburg fine sandy loam is 1.25 miles north of Leggett on State Road 1429, 815 feet northwest on farm path, and 300 feet northeast in field:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; strongly acid; abrupt smooth boundary.

B21t—7 to 14 inches; light yellowish brown (2.5Y 6/4) sandy clay loam; common medium distinct yellowish brown (10YR 5/8) mottles; weak medium subangular blocky structure; friable; few fine roots; very strongly acid; abrupt smooth boundary.

B22tg—14 to 52 inches; gray (10YR 6/1) sandy clay loam; common medium prominent yellowish brown (10YR 5/8) and strong brown (7.5YR 5/8), and common medium distinct light yellowish brown (2.5Y 6/4) mottles; weak medium subangular blocky structure; friable; very strongly acid; gradual wavy boundary.

B23tg—52 to 76 inches; gray (10YR 6/1) sandy clay loam; common medium prominent strong brown (7.5YR 5/8), common medium faint very pale brown (10YR 7/4), and few fine and medium prominent yellowish red (5YR 5/8) mottles; weak medium and coarse subangular blocky structure; friable; very strongly acid; gradual wavy boundary.

Cg—76 to 85 inches; gray (10YR 6/1) sandy clay loam; common medium prominent strong brown (7.5YR 5/8), common medium faint very pale brown (10YR 7/4), and few fine prominent yellowish red mottles; massive; friable; very strongly acid.

Solum thickness is more than 60 inches. The subsoil is dominantly strongly acid or very strongly acid but ranges to extremely acid.

The Ap or A1 horizon is dark gray or dark grayish brown. The A2 horizon, where present, is pale brown or very pale brown. The A horizon is loamy sand, sandy loam, or fine sandy loam.

The B1 horizon, where present, is pale brown, light yellowish brown, yellowish brown, or brown fine sandy loam or sandy loam.

The B2t horizon is pale brown, light yellowish brown, brownish yellow, or brown sandy clay loam, clay loam, or sandy loam. Below a depth of about 20 inches, the B2t horizon is dark gray, gray, light gray, or light brownish gray. The B3 horizon, where present, is gray, light gray, or light brownish gray sandy clay loam, clay loam, or sandy loam.

The C horizon is grayish sandy, loamy, or clayey strata.

Marlboro series

The Marlboro series consists of well drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes are 0 to 6 percent.

A typical pedon of Marlboro sandy loam, 0 to 2 percent slopes, is 0.9 mile east of Rocky Mount on State

Road 1232, and 130 feet south of road, in a cultivated field:

Ap—0 to 8 inches; grayish brown (10YR 5/2) sandy loam; weak medium granular structure; very friable; many fine and medium roots; medium acid; abrupt smooth boundary.

A2—8 to 10 inches; light yellowish brown (10YR 6/4) sandy loam; weak medium granular structure; very friable; common fine roots; medium acid; clear wavy boundary.

B1—10 to 12 inches; brownish yellow (10YR 6/6) sandy clay loam; weak fine and medium subangular blocky structure; friable; few fine roots; very strongly acid; clear wavy boundary.

B21t—12 to 26 inches; yellowish brown (10YR 5/6) sandy clay; weak fine and medium subangular blocky structure; firm, sticky, plastic; few fine roots; few thin faint patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B22t—26 to 52 inches; yellowish brown (10YR 5/6) clay; common medium distinct red (2.5YR 4/6) and faint strong brown (7.5YR 5/8) mottles; weak fine and medium subangular blocky structure; firm, sticky, plastic; few thin faint patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B23t—52 to 63 inches; brownish yellow (10YR 6/6) clay; many medium faint strong brown (7.5YR 5/8), common medium distinct red (2.5YR 4/6) and light gray (10YR 7/1), and common medium faint very pale brown (10YR 7/4) mottles; weak fine and medium subangular blocky structure; firm, sticky, plastic; few thin faint patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B3—63 to 71 inches; mottled brownish yellow (10YR 6/6), reddish yellow (7.5YR 6/8), red (2.5YR 4/6), light gray (10YR 7/l), and very pale brown (10YR 7/4) sandy clay; weak medium subangular blocky structure; firm, sticky, plastic; few thin faint patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

Solum thickness is more than 60 inches. The B horizon is dominantly very strongly acid or strongly acid but ranges to slightly acid in some pedons.

The Ap or A1 horizon is grayish brown, dark grayish brown, dark brown, or brown. The A2 horizon, where present, is light yellowish brown or pale brown. The A horizon is sandy loam, fine sandy loam, or loamy sand.

The B1 horizon, where present, is yellowish brown or brownish yellow. The B2t horizon is yellowish brown, strong brown, or brownish yellow sandy clay, clay, or clay loam. The B3 horizon is variable in color and is sandy clay, sandy clay loam, or clay.

Meggett series

The Meggett series consists of poorly drained soils that formed in Coastal Plain sediments. Slopes are 0 to 2 percent.

A typical pedon of Meggett loam is 1.8 miles northeast of Battleboro on State Road 1411, 0.9 mile north of road on farm path, 300 feet north on gas pipeline right-of-way, and 300 feet east in woods:

O1—2 inches to 1 inch; loose leaves, twigs, and miscellaneous organic litter.

O2—I inch to 0; very dark grayish brown (10YR 3/2) partially decomposed organic matter.

A1—0 to 5 inches; dark grayish brown (10YR 4/2) loam; moderate medium granular structure; friable; many fine and coarse roots; few fine flakes of mica; medium acid; abrupt wavy boundary.

B2tg—5 to 47 inches; gray (5Y 6/1) clay loam; common medium prominent strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6) and few fine prominent yellowish red mottles; weak medium angular blocky structure; firm, sticky, plastic; common fine roots; common thin distinct patchy clay films coating large pores; common fine flakes of mica; few medium black concretions; medium acid; gradual wavy boundary.

B3g—47 to 54 inches; greenish gray (5GY 6/1) clay; common medium prominent strong brown (7.5YR 5/6) and yellowish brown (10YR 5/6), common fine faint greenish gray, and few fine prominent yellowish red mottles; weak fine angular and subangular blocky structure; very firm, sticky, plastic; few fine roots; common thin distinct patchy clay films coating large pores; common fine flakes of mica; few medium black concretions; neutral; gradual wavy boundary.

C1g—54 to 64 inches; greenish gray (5G 5/1) clay; common medium prominent strong brown (7.5YR 5/6), common medium faint dark greenish gray (5G 4/1), and common fine distinct olive brown mottles; massive; very firm, sticky, plastic; few fine roots; common fine flakes of mica; few medium black concretions; neutral; clear wavy boundary.

C2g—64 to 70 inches; gray (5Y 6/1) sandy clay loam with pockets of sandy loam and loamy sand; many medium faint greenish gray (5G 5/1), common medium faint light olive gray (5Y 6/2), and few fine prominent strong brown mottles; massive; friable, slightly sticky, slightly plastic; common fine flakes of mica; neutral; abrupt wavy boundary.

Solum thickness ranges from 40 to 72 inches. This soil is medium acid to moderately alkaline.

The A horizon is dark gray or dark grayish brown loam or sandy loam.

The B horizon is gray, light gray, or greenish gray clay, clay loam, or sandy clay.

The C horizon is similar in color to the B horizon and is variable in texture.

Meggett soils as mapped in Edgecombe County are taxadjuncts to the Meggett series; they have a slightly higher content of silt than Meggett soils. Use, management and behavior, however, are the same as for the Meggett series.

Nahunta series

The Nahunta series consists of somewhat poorly drained soils that formed in Coastal Plain sediments. Slopes are 0 to 2 percent.

A typical pedon of Nahunta very fine sandy loam is 1.5 miles south of Macclesfield on State Road 1112, 1,800 feet west on State Road 1004, 1,240 feet south on farm road, and 120 feet west of the farm road, in a wooded pasture:

A1—0 to 5 inches; very dark gray (10YR 3/1) very fine sandy loam; weak medium granular structure; very friable; common fine roots; very strongly acid; clear wavy boundary.

A2—5 to 9 inches; pale brown (10YR 6/3) very fine sandy loam; few fine distinct yellowish brown and many medium distinct very dark grayish brown (10YR 3/2) bodies of A1 material; weak medium granular structure; very friable; common fine and medium roots; strongly acid; clear wavy boundary.

B1—9 to 12 inches; pale brown (10YR 6/3) very fine sandy loam; common medium distinct yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; very friable; common fine roots; strongly acid; clear wavy boundary.

B21tg—12 to 36 inches; gray (10YR 6/1) loam; common medium faint pale brown (10YR 6/3), common medium prominent strong brown (7.5YR 5/6), and few fine prominent yellowish red mottles; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; very strongly acid; gradual wavy boundary.

B22tg—36 to 45 inches; gray (10YR 6/1) loam; common medium faint pale brown (10YR 6/3), many medium prominent strong brown (7.5YR 5/6), and common medium prominent red (2.5YR 4/8) mottles; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; very strongly acid; gradual wavy boundary.

B23tg—45 to 67 inches; gray (10YR 6/1) loam; common medium faint pale brown (10YR 6/3), common medium prominent strong brown (7.5YR 5/6), and few fine prominent red mottles; weak medium subangular blocky structure; friable; very strongly acid; gradual wavy boundary.

Cg—67 to 99 inches; light gray (10YR 7/2) loam; many coarse prominent reddish yellow (7.5YR 6/8) mottles; massive; friable; very strongly acid.

Solum thickness ranges from 60 to more than 80 inches. The subsoil is dominantly strongly acid or very strongly acid but ranges to extremely acid.

The Ap or A1 horizon is dark gray, very dark gray, or dark grayish brown. Where the Ap or A1 horizon is very dark gray or very dark grayish brown, it is less than 10 inches thick. The A2 horizon, where present, is pale brown, pale yellow, or light brownish gray. The A horizon is very fine sandy loam, silt loam, or loam.

The B1 horizon, where present, is pale brown or very pale brown very fine sandy loam or loam. The B21t horizon is light yellowish brown, pale brown, brownish yellow, or gray. The B22t and B23tg horizons are gray or light gray. The B2t horizon is loam or clay loam. The B3 horizon is gray or light gray loam or clay loam.

The C horizon has colors similar to those in the lower part of the B horizon. It is commonly stratified sandy, loamy, or clayey material.

Norfolk series

The Norfolk series consists of well drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes range from 0 to 10 percent.

Typical pedon of Norfolk loamy sand, 2 to 6 percent slopes, is 0.9 mile southeast of Whitakers on a farm path, 330 feet north on path and 45 feet east in field:

Ap—0 to 7 inches; brown (10YR 5/3) loamy sand; weak medium granular structure; very friable; many fine and medium roots; slightly acid; abrupt smooth boundary.

A2—7 to 12 inches; light yellowish brown (10YR 6/4) loamy sand; weak medium granular structure; very friable; few fine roots; medium acid; abrupt wavy boundary.

B21t—12 to 25 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; few thin faint patchy clay films on faces of peds; very strongly acid; clear wavy boundary.

B22t—25 to 59 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium distinct yellowish red (5YR 5/8), common medium faint strong brown (7.5YR 5/8), and few fine prominent red mottles; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few thin faint patchy clay films on faces of peds; very strongly acid; clear wavy boundary.

B23t—59 to 79 inches; brownish yellow (10YR 6/6) sandy clay loam; common medium distinct light gray (10YR 7/2) and strong brown (7.5YR 5/8), common fine and medium prominent red (2.5YR 4/8), and

common medium faint very pale brown (10YR 7/4) mottles; weak medium and coarse subangular blocky structure; friable, slightly sticky, slightly plastic; very strongly acid; gradual wavy boundary.

C—79 to 90 inches; yellow (10YR 7/6) sandy clay loam and coarse sandy loam; many fine distinct yellowish red, common medium distinct light gray (10YR 7/1), and few fine prominent red (2.5YR 5/8) mottles; massive; very friable; very strongly acid.

Solum thickness is commonly 60 to 90 inches but ranges to 120 inches. The subsoil is strongly acid or very strongly acid.

The Ap or A1 horizon is grayish brown, brown, pale brown, gray, or yellowish brown. The A2 horizon, where present, is pale brown, very pale brown, or light yellowish brown. The A horizon is loamy sand, fine sandy loam, sandy loam, or loamy fine sand.

The B1 horizon, where present, is light yellowish brown, brownish yellow, or yellowish brown sandy loam, fine sandy loam, or sandy clay loam. The B2t horizon is yellowish brown, brownish yellow, or strong brown sandy clay loam, fine sandy loam, or clay loam. The B3 horizon, where present, is similar in color to the lower part of the B2 horizon and is sandy clay loam, fine sandy loam, sandy loam, or clay loam.

The C horizon is variable in color and is stratified sandy, loamy, or clayey material.

Pactolus series

The Pactolus series consists of moderately well drained and somewhat poorly drained soils that formed in Coastal Plain sediments. These soils are on uplands and stream terraces. Slopes are 0 to 2 percent.

A typical pedon of Pactolus loamy sand is 1.5 miles south of Tarboro on U.S. Highway 258, 0.7 mile west of highway on farm path to railroad, and 50 feet east of railroad, in woods:

O1— 2 inches to 1 inch; leaves, pine needles, and organic litter.

O2—1 inch to 0; dark brown (7.5YR 3/2) partially decomposed organic matter.

A1—0 to 5 inches; dark gray (10YR 4/1) loamy sand; weak fine and medium granular structure; very friable; many fine and medium roots; very strongly acid; abrupt smooth boundary.

C1—5 to 18 inches; light yellowish brown (2.5Y 6/4) loamy sand; very weak medium granular structure; very friable; common fine roots; approximately 15 percent of the sand fraction is uncoated; very strongly acid; gradual wavy boundary.

C2—18 to 26 inches; yellow (10YR 7/6) loamy sand; common medium faint brownish yellow (10YR 6/6) and very pale brown (10YR 7/3) mottles; weak medium granular structure; very friable; common fine roots; approximately 10 percent of sand fraction is uncoated; very strongly acid; gradual wavy boundary.

C3—26 to 47 inches; very pale brown (10YR 7/4) loamy sand; many coarse distinct white (10YR 8/1) and common medium distinct brownish yellow (10YR 6/8) mottles; massive; very friable; few fine roots; approximately 25 percent of sand fraction is uncoated; very strongly acid; gradual wavy boundary.

C4—47 to 56 inches; brownish yellow (10YR 6/8) loamy sand; few fine prominent white mottles; massive; very friable; few fine roots; less than 5 percent of sand fraction is uncoated; very strongly acid; gradual wavy boundary.

C5—56 to 85 inches; light gray (10YR 7/1) loamy sand; common coarse prominent brownish yellow (10YR 6/8) mottles; massive; very friable; more than 50 percent of sand fraction is uncoated; very strongly acid.

Pactolus soils are strongly acid or very strongly acid except where limed.

The A horizon is dark gray, dark grayish brown, gray, or grayish brown sand, fine sand, loamy sand, or loamy fine sand.

The upper part of the C horizon is pale brown, very pale brown, light yellowish brown, yellow, brownish yellow, or yellowish brown loamy sand, sand, loamy fine sand, or fine sand.

The lower part of the C horizon is gray, light gray, or light brownish gray loamy sand, fine sand, loamy fine sand, or sand.

Portsmouth series

The Portsmouth series consists of very poorly drained soils that formed in fluvial sediments. These soils are on stream terraces. Slopes are 0 to 2 percent.

A typical pedon of Portsmouth fine sandy loam is 5.5 miles east of Tarboro on N.C. Highway 44, 1.2 miles northeast of intersection with State Road 1527, and 20 feet east in field:

Ap—0 to 9 inches; very dark gray (10YR 3/1) fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; medium acid; clear smooth boundary.

A12—9 to 16 inches; very dark gray (10YR 3/1) fine sandy loam; weak medium granular structure; very friable; common fine roots; very strongly acid; clear wavy boundary.

B2tg—16 to 33 inches; light brownish gray (10YR 6/2) sandy clay loam; common medium faint dark gray (10YR 4/1) organic stains and few fine and medium distinct yellowish brown (10YR 5/8) mottles; weak medium subangular blocky structure; friable; few thin

faint patchy clay films on faces of peds; very strongly acid; clear wavy boundary.

B3g—33 to 40 inches; light brownish gray (10YR 6/2) sandy loam; common medium faint dark gray (10YR 4/1) organic stains; few pockets of loamy sand; weak medium subangular blocky structure; very friable; very strongly acid; gradual wavy boundary.

IIC1g—40 to 49 inches; light brownish gray (10YR 6/2) loamy sand; common medium faint dark gray (10YR 4/1) organic stains; few fine distinct yellowish brown mottles; massive; very friable; common medium grains of feldspar; very strongly acid; clear wavy boundary.

IIC2g—49 to 82 inches; light gray (10YR 7/1) loamy sand; massive; very friable; common medium grains of feldspar; very strongly acid.

Solum thickness ranges from 24 to 40 inches. The subsoil is strongly acid or very strongly acid.

The A1 or Ap horizon is very dark gray, black, or very dark grayish brown fine sandy loam, loam, or sandy loam. The A2 horizon, where present, is dark gray, light brownish gray, or grayish brown.

The B horizon is gray, light brownish gray, dark gray, light gray, or grayish brown. The B1 horizon, where present, is fine sandy loam, loam, sandy clay loam, or sandy loam. The B2t horizon is sandy clay loam, loam, or clay loam. The B3g horizon is sandy loam, fine sandy loam, or sandy clay loam.

The C horizon is similar in color to the lower part of the B horizon and is commonly stratified sandy and loamy material.

Rains series

The Rains series consists of poorly drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes are 0 to 2 percent.

A typical pedon of Rains fine sandy loam is 10 miles northeast of Tarboro in the Gatlin Woods, 1/3 mile north of the intersection of New Road and the Hobgood tram, and 50 yards east of New Road, in a clearcut area:

A1—0 to 7 inches; very dark gray (10YR 3/1) fine sandy loam; weak medium granular structure; very friable; common fine and medium roots; very strongly acid; abrupt wavy boundary.

A2—7 to 11 inches; gray (10YR 5/1) fine sandy loam; many medium distinct very dark gray (10YR 3/1) mottles; weak medium granular structure; very friable; few fine roots; very strongly acid; clear wavy boundary.

B1g—11 to 13 inches; gray (10YR 5/1) fine sandy loam; common medium distinct very dark gray (10YR 3/1) and few fine distinct yellowish brown mottles; weak medium subangular blocky structure; very friable; very strongly acid; clear smooth boundary.

B2tg—13 to 61 inches; gray (10YR 6/1) sandy clay loam; common coarse pockets of sandy clay; common medium distinct yellowish brown (10YR 5/6) and few fine prominent reddish yellow mottles; weak medium subangular blocky structure; friable; very strongly acid; gradual smooth boundary.

B3g—61 to 75 inches; gray (10YR 6/1) sandy clay loam; many coarse pockets of sandy clay; common medium faint dark gray (10YR 4/1), common medium distinct brownish yellow (10YR 6/8), and few fine prominent reddish yellow mottles; weak medium subangular blocky structure grading to massive; firm; very strongly acid; gradual smooth boundary.

Cg—75 to 99 inches; gray (10YR 6/1) sandy clay; common coarse pockets of sandy clay loam; common medium faint dark gray (10YR 4/1), and few fine prominent reddish yellow mottles; massive; firm; very strongly acid.

Solum thickness ranges from 60 to 100 inches. The subsoil is strongly acid or very strongly acid.

The Ap or A1 horizon is dark grayish brown, dark gray, very dark gray, or black. Where the A horizon is very dark gray or black, it is less than 10 inches thick. The A2 horizon is light brownish gray, gray, or grayish brown. The A horizon is fine sandy loam, sandy loam, or loamy sand.

The B1g horizon is gray or light gray sandy loam or fine sandy loam. The B2tg horizon is gray, light gray, grayish brown, or dark gray sandy clay loam or clay loam. The B3g horizon is gray or light gray sandy clay loam, sandy clay, or sandy loam.

The Cg horizon is gray or light gray sandy clay, sandy clay loam, or sandy loam.

Roanoke series

The Roanoke series consists of poorly drained soils that formed in fluvial sediments. These soils are on stream terraces. Slopes are 0 to 2 percent.

A typical pedon of Roanoke loam is 4 miles southeast of Tarboro on U.S. Highway 64, 1,200 feet west of Mildred on farm path across canal, and 200 feet west of canal, in pasture:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) loam; weak medium granular structure; very friable; many fine and medium roots; slightly acid; abrupt smooth boundary.

B1g—8 to 11 inches; gray (10YR 5/1) clay loam; many coarse faint dark grayish brown (10YR 4/2) and few medium faint dark gray (10YR 4/1) mottles; weak medium subangular blocky structure; firm; common fine roots; few fine and very fine flakes of mica; very strongly acid; gradual wavy boundary.

B2tg—11 to 42 inches; gray (10YR 5/1) clay; many medium faint dark gray (10YR 4/1) and common medium prominent strong brown (7.5YR 5/8) mottles; moderate medium angular blocky structure; very firm, sticky, plastic; common thick distinct discontinuous clay films on faces of peds and coating pores; common fine roots; few fine and very fine flakes of mica; medium grains of feldspar are common in lower part; very strongly acid; gradual wavy boundary.

B3g—42 to 52 inches; gray (10YR 6/1) sandy clay loam; common coarse faint dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) mottles; common pockets of sandy clay and loamy sand; weak medium subangular blocky structure; friable; few fine roots; few fine and very fine flakes of mica; many medium grains of feldspar; very strongly acid; clear wavy boundary.

IIC—52 to 90 inches; gray (10YR 6/1) coarse sand; single grained; loose; few fine flakes of mica; many medium and coarse grains of feldspar; strongly acid.

Solum thickness ranges from 40 to 60 inches. The subsoil ranges from very strongly acid to strongly acid.

The Ap or A1 horizon is dark grayish brown or dark gray. The A2 horizon, where present, is light brownish gray, light gray, or grayish brown. The A horizon is loam, silt loam, or fine sandy loam.

The B1g horizon, where present, is light brownish gray, grayish brown, light gray, or gray clay loam or silty clay loam. The B2g horizon is dark gray, light brownish gray, gray, or grayish brown clay, clay loam, or silty clay. The B3g horizon is gray, dark gray, or light brownish gray clay, silty clay loam, clay loam, or sandy clay loam.

The Cg horizon is similar in color to the B3 horizon and is commonly stratified sandy and loamy material.

State series

The State series consists of well drained soils that formed in fluvial sediments. These soils are on stream terraces. Slopes range from 0 to 4 percent.

A typical pedon of State loamy sand, 0 to 4 percent slopes, is 1.5 miles west of Tarboro on U.S. Highway 64, 0.9 mile north of highway on farm path, 300 feet east on path, and 150 feet south of path, in a field:

Ap—0 to 8 inches; brown (10YR 5/3) loamy sand; weak fine and medium granular structure; very friable; many fine and medium roots; medium acid; abrupt smooth boundary.

A2—8 to 13 inches; brown (7.5YR 5/4) loamy sand; weak medium granular structure; very friable; common fine roots; few fine flakes of mica; strongly acid; clear wavy boundary.

B1—13 to 16 inches; strong brown (7.5YR 5/6) sandy loam; weak fine subangular blocky structure; very friable; few fine roots; few fine flakes of mica; strongly acid; clear wavy boundary.

B2t—16 to 32 inches; strong brown (7.5YR 5/6) sandy clay loam; weak fine and medium subangular blocky structure; friable; few fine roots; few thin faint patchy clay films on faces of peds; common fine flakes of mica; strongly acid; gradual wavy boundary.

B3—32 to 40 inches; strong brown (7.5YR 5/8) sandy loam; weak fine subangular blocky structure; very friable; few fine roots; common fine flakes of mica; strongly acid; gradual wavy boundary.

IIC1—40 to 62 inches; brownish yellow (10YR 6/6) sand; single grained; loose; common fine flakes of mica; medium acid; gradual wavy boundary.

IIC2—62 to 75 inches; very pale brown (10YR 7/4) sand; single grained; loose; common fine flakes of mica; medium acid; gradual wavy boundary.

IIC3—75 to 85 inches; very pale brown (10YR 8/3) sand; single grained; loose; common fine flakes of mica; medium acid; gradual wavy boundary.

IIC4—85 to 99 inches; white (10YR 8/1) coarse sand; single grained; loose; common fine flakes of mica; few rounded pebbles; medium acid.

Solum thickness ranges from 35 to 60 inches. The subsoil is strongly acid or very strongly acid.

The Ap or A1 horizon is brown, dark brown, yellowish brown, dark yellowish brown, grayish brown, or dark grayish brown. The A2 horizon is brown, light yellowish brown, reddish yellow, or yellowish brown. The A horizon is loamy sand, sandy loam, or fine sandy loam.

The B horizon is strong brown, yellowish brown, brownish yellow, or reddish yellow. The B1 horizon is sandy loam or loam. The B2t horizon is sandy clay loam, clay loam, or loam. The B3 horizon is sandy loam or loam.

The C horizon is brownish yellow, yellowish brown, very pale brown, or white stratified sandy and loamy material.

Tarboro series

The Tarboro series consists of somewhat excessively drained soils that formed in fluvial or eolian sediments. These soils are on stream terraces. Slopes are 0 to 6 percent.

A typical pedon of Tarboro loamy sand, 0 to 6 percent slopes, is 2.5 miles west of Tarboro on U.S. Highway 64, 0.2 mile northwest on State Road 1207, 2 miles north on farm path, and 50 feet northeast of path, in a field:

Ap—0 to 8 inches; brown (10YR 4/3) loamy sand; weak fine and medium granular structure; very friable; many fine and medium roots; medium acid; abrupt smooth boundary.

C1—8 to 26 inches; yellowish brown (10YR 5/6) loamy sand; weak medium granular structure and single

grained; very friable; few fine roots; common fine flakes of mica; strongly acid; gradual wavy boundary.
C2—26 to 40 inches; brownish yellow (10YR 6/6) loamy sand; single grained; very friable; few fine roots; few fine flakes of mica; medium acid; gradual wavy boundary.
C3—40 to 57 inches; yellow (10YR 7/6) sand; single grained; loose; few fine flakes of mica; slightly acid; gradual wavy boundary.
C4—57 to 82 inches; very pale brown (10YR 7/4) sand; single grained; loose; few fine flakes of mica; slightly acid; clear wavy boundary.
C5—82 to 99 inches; very pale brown (10YR 7/4) coarse sand; single grained; loose; few fine flakes of mica; slightly acid.

This soil ranges from strongly acid to slightly acid except where limed.

The A horizon is dark grayish brown, brown, or yellowish brown loamy sand or sand.

The C horizon is yellowish brown, strong brown, reddish yellow, brownish yellow, yellow, light yellowish brown, pale brown, or very pale brown loamy sand, sand, or coarse sand.

Wagram series

The Wagram series consists of well drained soils that formed in Coastal Plain sediments. These soils are on uplands. Slopes range from 0 to 15 percent.

A typical pedon of Wagram loamy sand, 0 to 6 percent slopes, is 5.5 miles southeast of Rocky Mount on N.C. Highway 43, 2.5 miles east on State Road 1222, 0.4 mile north on a farm road, and 60 feet west in a field:

Ap—0 to 7 inches; dark grayish brown (2.5Y 4/2) loamy sand; weak medium granular structure; very friable; many fine and medium roots; slightly acid; abrupt smooth boundary.
A2—7 to 29 inches; pale yellow (2.5Y 7/4) loamy sand; weak medium granular structure; very friable; few fine roots; medium acid; abrupt wavy boundary.
B21t—29 to 48 inches; yellowish brown (10YR 5/8) sandy clay loam; few fine faint yellowish red mottles; weak medium subangular blocky structure; friable; few fine roots; few thin faint patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.
B22t—48 to 74 inches; brownish yellow (10YR 6/8) sandy clay loam; many medium and coarse distinct yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; friable; few thin faint patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.
B3—74 to 94 inches; brownish yellow (10YR 6/8) sandy loam; many medium and coarse distinct yellowish red (5YR 5/8) and few medium distinct light gray (2.5Y 7/2) mottles; weak medium and coarse subangular blocky structure; very friable; very strongly acid.

Solum thickness ranges from 60 to 80 inches or more. The subsoil is strongly acid or very strongly acid.

The Ap or A1 horizon is dark grayish brown, grayish brown, gray, or dark gray. The A2 horizon is pale yellow, pale brown, very pale brown, or light yellowish brown. The A horizon is loamy sand, sand, or loamy fine sand.

The B horizon is yellowish brown, brownish yellow, light yellowish brown, or strong brown. The B horizon is sandy clay loam or sandy loam.

The C horizon is variable in color and is usually stratified sandy and loamy material.

Wahee series

The Wahee series consists of somewhat poorly drained soils that formed in fluvial sediments. These soils are on stream terraces. Slopes are 0 to 2 percent.

A typical pedon of Wahee fine sandy loam is 3.2 miles southeast of Tarboro on U.S. Highway 64 and 50 feet north of highway, in a field:

Ap—0 to 9 inches; dark grayish brown (2.5Y 4/2) fine sandy loam; weak medium granular structure; very friable; many fine and medium roots; medium acid; clear smooth boundary.
B1—9 to 14 inches; light yellowish brown (10YR 6/4) clay loam; common medium distinct strong brown (7.5YR 5/6) and few medium faint light gray (10YR 7/1) mottles; weak medium subangular blocky structure; firm; common fine roots; very strongly acid; clear wavy boundary.
B2tg—14 to 46 inches; gray (10YR 6/1) clay; many medium prominent strong brown (7.5YR 5/6) mottles; moderate medium prismatic primary structure that parts to moderate fine and medium angular blocky; very firm, sticky, plastic; few fine roots; few thin faint continuous clay films on faces of primary peds and coating large pores; very strongly acid; clear wavy boundary.
B3g—46 to 63 inches; gray (10YR 6/1) clay loam; common fine prominent strong brown mottles; weak coarse subangular blocky structure; firm, sticky, plastic; very strongly acid; gradual wavy boundary.
C1g—63 to 75 inches; gray (5Y 6/1) sandy clay loam; few fine prominent yellowish brown mottles; massive; friable; common medium grains of feldspar; common lenses and pockets of loamy sand and clay loam; very strongly acid.

Solum thickness ranges from 50 to 80 inches. The subsoil is strongly acid or very strongly acid.

The Ap or A1 horizon is dark grayish brown or dark gray. The A2 horizon, where present, is light brownish

gray, pale yellow, pale brown, or grayish brown. The A horizon is fine sandy loam or loam.

The B1 horizon, where present, is light yellowish brown, pale brown, or brownish yellow clay loam or sandy clay loam. The B2t horizon is gray or dark gray clay, clay loam, or silty clay loam. The B3 horizon is gray, light gray, or light brownish gray sandy clay loam or clay loam.

The C horizon is gray or light gray sand, loamy sand, or sandy clay loam.

Wehadkee series

The Wehadkee series consists of poorly drained soils that formed in recent alluvial sediments. These soils are on flood plains. Slopes are less than 2 percent.

A typical pedon of Wehadkee silt loam is 0.5 mile north of Tarboro on N.C. Highway 44, 350 feet north of bridge, and 120 feet east in woods:

O1—1 inch to 0; fresh and slightly decayed organic litter.

A1—0 to 6 inches; brown (10YR 5/3) silt loam; moderate medium granular structure; friable; many fine, medium, and coarse roots; common fine flakes of mica; very strongly acid; clear wavy boundary.

C1g—6 to 10 inches; light brownish gray (10YR 6/2) loam; many medium faint brown (10YR 4/3) mottles; common fine faint very dark gray and few fine distinct black streaks and bodies of organic material; weak medium subangular blocky structure; friable; many fine, medium, and coarse roots; common fine flakes of mica; very strongly acid; clear wavy boundary.

C2g—10 to 32 inches; gray (10YR 6/1) loam; common fine and medium prominent strong brown (7.5YR 5/8) and common medium faint pale brown (10YR 6/3) mottles; few fine prominent dark reddish brown (5YR 3/3) and black (10YR 2/1) streaks and bodies of organic material occurring irregularly with depth; weak medium subangular blocky structure; friable; common fine and medium roots; common fine flakes of mica; stratification is evident in about half of this horizon; very strongly acid; clear wavy boundary.

C3g—32 to 84 inches; gray (10YR 6/1) clay loam; common medium prominent strong brown (7.5YR 5/8) and common medium faint very pale brown (10YR 7/3) mottles; dark reddish brown (5YR 3/3) and black (10YR 2/1) streaks and bodies of organic material occurring irregularly with depth; weak medium subangular blocky structure; friable; common fine and medium roots; common fine flakes of mica; very strongly acid.

Wehadkee soils range from very strongly acid to slightly acid except where limed.

The A1 horizon is dark grayish brown, brown, gray, or grayish brown silt loam or loam.

The upper part of the C horizon is light brownish gray, light gray, grayish brown, or gray loam, silt loam, silty clay loam, clay loam, or sandy clay loam. The lower part of the C horizon is gray, light gray, or light brownish gray silty clay loam, clay loam, or loam.

Wehadkee soils as mapped in Edgecombe County are taxadjuncts to the Wehadkee series. They have a slightly lower content of fine and coarser sand and are more acid than defined in the range for the Wehadkee series. Use, management, and behavior, however, are the same as for the Wehadkee series.

Wickham series

The Wickham series consists of well drained soils that formed in fluvial sediments. These soils are on stream terraces. Slopes are 0 to 4 percent.

A typical pedon of Wickham sandy loam, 0 to 4 percent slopes, is 3 miles east of Rocky Mount on N.C. Highway 97, 400 feet north of highway on farm path, 150 feet west on path, and 40 feet south of path, in a cultivated field:

Ap—0 to 8 inches; brown (10YR 5/3) sandy loam; weak medium granular structure; very friable; many fine and medium roots; medium acid; abrupt smooth boundary.

A2—8 to 12 inches; reddish yellow (7.5YR 7/6) sandy loam; weak medium granular structure; very friable; common fine roots; few fine flakes of mica; strongly acid; clear wavy boundary.

B1—12 to 15 inches; reddish yellow (5YR 6/8) sandy loam; weak fine subangular blocky structure; very friable; common fine roots; common fine flakes of mica; very strongly acid; clear wavy boundary.

B2t—15 to 38 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; few thin clay films on faces of peds; common fine flakes of mica; strongly acid; gradual wavy boundary.

B3—38 to 46 inches; yellowish red (5YR 5/8) sandy loam; weak fine subangular blocky structure; very friable; common fine flakes of mica; strongly acid; gradual wavy boundary.

IIC1—46 to 60 inches; strong brown (7.5YR 5/8) loamy sand; single grained; loose; common fine flakes of mica; strongly acid; gradual wavy boundary.

IIC2—60 to 99 inches; reddish yellow (7.5YR 6/8) sand; single grained; loose; common fine flakes of mica; medium acid.

Solum thickness ranges from 36 to more than 60 inches. The subsoil ranges from very strongly acid to medium acid.

The Ap horizon is dark grayish brown or brown loamy sand, sandy loam, or fine sandy loam. The A2 horizon,

where present, is pale brown, light yellowish brown, or reddish yellow loamy sand, sandy loam, or fine sandy loam.

The B1 horizon, where present, is strong brown, reddish yellow, or yellowish red sandy loam or fine sandy loam. The B2t horizon is red or yellowish red sandy clay loam or clay loam. The B3 horizon is strong brown, yellowish red, or reddish yellow sandy loam or loamy sand.

The C horizon is strong brown, pale brown, or reddish yellow loamy sand, sand, or coarse sand.

Formation of the soils

In this section the factors of soil formation are discussed and related to the soils in the survey area. In addition, the processes of soil formation are described.

Factors of soil formation

Soil is the product of the combined effect of parent material, climate, plant and animal life, relief, and time. The characteristics of a soil at any place depend upon the combination of these five environmental factors at that place. All of these factors affect the formation of every soil, but in many places one or two factors have the greatest influence on the properties of a particular soil.

Parent material

The parent materials of the soils of Edgecombe County are of two closely related kinds: unconsolidated rock materials, sand, silt, and clay that make up the sediments of the Coastal Plain uplands and material washed from the Coastal Plain uplands and lower Piedmont and deposited in drainageways and flood plains as alluvium. In some pedons these soil materials have been moved by wind or gravity.

The parent materials in the county differ in mineral and chemical composition and in physical makeup. Many of the differences among the soils of Edgecombe County reflect the variety of geological materials in which the soils were formed. Major differences, such as texture, can be observed in the field. More obscure differences, such as mineral composition, can be determined only by careful laboratory examination. Some examples of soils that formed in different parent materials follow:

1. Aycock, Exum, Nahunta, and Grantham soils formed in sediments that have a high percentage of silt and very fine sand and moderate amounts of clay.
2. Norfolk, Goldsboro, Lynchburg, and Rains soils formed in loamy sediments that have a low percentage of silt and very fine sand and moderate amounts of clay.
3. Tarboro, Blanton, and Pactolus soils formed in sediments that are mostly sand.
4. Duplin, Roanoke, and Wahee soils formed in sediments that have a high percentage of clay.
5. Bibb, Johnston, Congaree, Chewacla, and Wehadkee soils formed on first bottoms from alluvial deposits of sand, silt, and clay. Johnston soils formed in part in alluvial deposits and in part in decayed plant material in undrained areas.

Parent material is one of the most important factors contributing to the differences among the soils of Edgecombe County.

Climate

Climate affects the physical, chemical, and biological relationship in the soil primarily through the influences of precipitation and temperature. Water dissolves minerals, is necessary for biological activity, and transports minerals and organic residue through the soil profile. The amount of water that actually percolates through the soil over a broad area is dependent mainly on amount and duration of rainfall, relative humidity, evapotranspiration, and the length of frost-free period. Temperature influences the kind and growth of organisms and the speed of physical and chemical reaction in the soils.

Edgecombe County is warm and humid. Average monthly precipitation is well distributed throughout the year. The relatively mild temperatures and abundant moisture encourage vegetative growth, cause rapid decomposition of organic litter, and speed up chemical reactions in the soil. The high rainfall leaches out large amounts of soluble bases, and less soluble fine materials are moved deeper into the soil. As a result, the soils of the county are acid and strongly leached. The climate is fairly uniform throughout the county and is not the major reason for local differences among soils.

Plant and animal life

Plant and animal life, in or on the soil, modify to some extent the formation of soil. The kinds and number of organisms that exist are determined to a large extent by the climate and to a varying degree by parent material, relief, and age of the soil. Bacteria, fungi, and other microscopic organisms aid in weathering rock and decomposing organic matter. The larger plants and animals furnish organic matter and transfer elements from the subsoil to the surface soil.

The activity of fungi and micro-organisms in the soils of Edgecombe County is usually confined to the upper few inches. Earthworms and other small invertebrates carry on a slow continued cycle of soil mixing, mostly in the upper few inches of soil. Rodents have little effect on soil formation in this county.

Edgecombe County was originally covered by a forest that consisted of a wide variety of hardwoods and several kinds of conifers. These trees took up elements from the subsoil and added organic matter by depositing leaves, roots, twigs, and eventually the whole plant on

the surface. The organic litter decays as a result of action by micro-organisms, earthworms, other forms of life, and direct chemical action. As the organic matter decays, organic acids and plant nutrients are released and percolate down through the soil. Roots take up some of the nutrients while organic acids are acting to dissolve more slowly soluble soil components and increase the rate of leaching of inorganic materials.

Organic matter decays rapidly on well drained soils, for example, Norfolk and Aycock soils, and very little accumulates in the surface layer. Excess moisture retards oxidation of organic matter; therefore, decay is slower on wet soils, for example, Portsmouth, Cape Fear, Ballahack, and Johnston soils. Consequently, wet soils have a much higher content of organic matter than well drained soils.

Plants and animals for the most part determine the kinds of organic matter added to the soil and the way in which it is incorporated with the soil. They transfer nutrient elements from one horizon to another and in many places transport soil material from one horizon to another. Plants and animals also affect gains and losses in organic matter, gains and losses of nitrogen, and gains and losses in other plant nutrients. Soil structure and porosity are also altered by plant and animal life.

Relief

Relief is an important factor in soil formation in this county. It strongly influences drainage, aeration, runoff, erosion, and exposure to sun and wind. Relief largely governs natural drainage. Several soils, such as Norfolk soils (well drained), Goldsboro soils (moderately well drained), Lynchburg soils (somewhat poorly drained), and Rains soils (poorly drained), formed in similar parent material but differ in degree of drainage. The soils of Edgecombe County range from nearly level to strongly sloping. The upland soils on smooth, nearly level divides, such as the Aycock and Norfolk soils, are well drained and have thick, well developed profiles. On steeper soils, soil materials are continually being removed or mixed by erosion and creep; as a result, these soils have a thinner solum, as in Gritney soils. In flat interstream areas and shallow depressions where natural drainage is poor, soils that have a darker surface layer and a gray subsoil mottled with yellow, such as the Rains and Grantham soils, have formed. In depressions where water stands for significant periods, very poorly drained soils such as Cape Fear, Portsmouth, Ballahack, and Johnston soils have formed a thick, black surface layer.

Topography is partly responsible for the depth of a soil and the kinds of horizons in a soil profile.

Time

The length of time required for soil to form depends on the other factors of soil formation. Less time is required for a soil to develop in a warm, humid region covered with dense vegetation than in a dry, cold region with sparse vegetation. With the same environment, less time is required for a soil to develop from coarse textured material than from similar but finer textured material.

Old soils generally have better defined horizons than young soils. In Edgecombe County, old soils, such as Norfolk and Aycock soils, on the smooth, nearly level upland divides, have well developed horizons. By contrast, the younger alluvial soils, such as Bibb soils, have not been in place long enough to develop well defined horizons.

There is no one soil-forming factor responsible for all variations among soils. All five factors, interacting one with the other, determine the physical and chemical characteristics in soil profiles.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly such soil formed in recent alluvium or on steep rocky slopes.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It

is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

	Inches
Very low	0 to 3
Low	3 to 6
Medium	6 to 9
High	More than 9

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of a standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity, but is more precise in meaning.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coat, clay skin.

Complex, soil. A map unit of two or more kinds of soil occurring in such an intricate pattern that they cannot be shown separately on a soil map at the selected scale of mapping and publication.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

Contour stripcropping (or contour farming). Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.

Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically for long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high

water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients, as for example in "hillpeats" and "climatic moors."

Drainage, surface. Runoff, or surface flow of water, from an area.

Erosion. The wearing away of the land surface by running water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of the activities of man or other animals or of a catastrophe in nature, for example, fire, that exposes a bare surface.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Flooding. The temporary covering of soil with water from overflowing streams, runoff from adjacent slopes, and tides. Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *occasional* that it occurs on an average of once or less in 2 years; and *frequent* that it occurs on an average of more than once in 2 years. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, and *long* if more than 7 days. Probable dates are expressed in months; *November-May*, for example, means that flooding can occur during the period November through May. Water standing for short periods after rainfall or commonly covering swamps and marshes is not considered flooding.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Habitat. The natural abode of a plant or animal; refers to the kind of environment in which a plant or animal normally lives, as opposed to the range or geographical distribution.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. The major horizons of mineral soil are as follows:

O horizon.—An organic layer, fresh and decaying plant residue, at the surface of a mineral soil.

A horizon.—The mineral horizon, formed or forming at or near the surface, in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon most of which was originally part of a B horizon.

A2 horizon.—A mineral horizon, mainly a residual concentration of sand and silt high in content of resistant minerals as a result of the loss of silicate clay, iron, aluminum, or a combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of change from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or a combination of these; (2) by prismatic or blocky structure; (3) by redder or browner colors than those in the A horizon; or (4) by a combination of these. The combined A and B horizons are generally called the solum, or true soil. If a soil lacks a B horizon, the A horizon alone is the solum.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the A or B horizon. The material of a C horizon may be either like or unlike that from which the solum is presumed to have formed. If the material is known to differ from that in the solum the Roman numeral II precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock commonly underlies a C horizon, but can be directly below an A or a B horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are—

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. Inadequate strength for supporting loads.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous areas. Areas that have little or no natural soil, are too nearly inaccessible for orderly examination, or cannot otherwise be feasibly classified.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent.* The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Nutrient, plant. Any element taken in by a plant, essential to its growth, and used by it in the production of food and tissue. Plant nutrients are nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, zinc, and perhaps other elements obtained from the soil; and carbon, hydrogen, and oxygen obtained largely from the air and water.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly. The slow movement of water through the soil adversely affecting the specified use.

Permeability. The quality that enables the soil to transmit water or air, measured as the number of inches per hour that water moves through the soil. Terms describing permeability are *very slow* (less than 0.06 inch), *slow* (0.06 to 0.20 inch), *moderately slow* (0.2 to 0.6 inch), *moderate* (0.6 to 2.0 inches), *moderately rapid* (2.0 to 6.0 inches), *rapid* (6.0 to 20 inches), and *very rapid* (more than 20 inches).

Phase, soil. A subdivision of a soil series or other unit in the soil classification system based on differences in the soil that affect its management. A soil series, for example, may be divided into phases on the bases of differences in slope, stoniness, thickness, or some other characteristic that affects management. These differences are too small to justify separate series.

pH value. (See Reaction, soil). A numerical designation of acidity and alkalinity in soil.

Piping. Moving water of subsurface tunnels or pipelike cavities in the soil.

Poor outlets. Surface or subsurface drainage outlets difficult or expensive to install.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. The degree of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction be-

cause it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	pH
Extremely acid	Below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Relief. The elevations or inequalities of a land surface, considered collectively.

Rooting depth. Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Runoff. The precipitation discharged in stream channels from a drainage area. The water that flows off the land surface without sinking in is called surface runoff; that which enters the ground before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Seepage. The rapid movement of water through the soil. Seepage adversely affects the specified use.

Series, soil. A group of soils, formed from a particular type of parent material, having horizons that, except for the texture of the A or surface horizon, are similar in all profile characteristics and in arrangement in the soil profile. Among these characteristics are color, texture, structure, reaction, consistence, and mineralogical and chemical composition.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Soil. A natural, three-dimensional body at the earth's surface that is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in mature soil consists of the A and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and other plant and animal life characteristics of the soil are largely confined to the solum.

Stratified. Arranged in strata, or layers. The term refers to geologic material. Layers in soils that result from the processes of soil formation are called horizons; those inherited from the parent material are called strata.

Stripcropping. Growing crops in a systematic arrangement of strips or bands which provide vegetative barriers to wind and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates that are separated from adjoining aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsurface layer. Technically, the A2 horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Surface soil. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use or management.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that it can soak into the soil or flow slowly to a prepared outlet without harm. A terrace in a field is generally built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea. A

stream terrace is frequently called a second bottom, in contrast with a flood plain, and is seldom subject to overflow. A marine terrace, generally wide, was deposited by the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt, silt loam, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or " very fine."

Topsoil (engineering). Presumably a fertile soil or soil material, or one that responds to fertilization, ordinarily rich in organic matter, used to topdress roadbanks, lawns, and gardens.

Unstable fill. Risk of caving or sloughing in banks of fill material.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Water table. The upper limit of the soil or underlying rock material that is wholly saturated with water. *Water table, apparent.* A thick zone of free water in the soil. An apparent water table is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil.

Water table, artesian. A water table under hydrostatic head, generally beneath an impermeable layer. When this layer is penetrated, the water level rises in an uncased borehole.

Water table, perched. A water table standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

ILLUSTRATIONS

Figure 1.—This wooded first bottom is in an area of the Wehadkee-Congaree association along Fishing Creek.

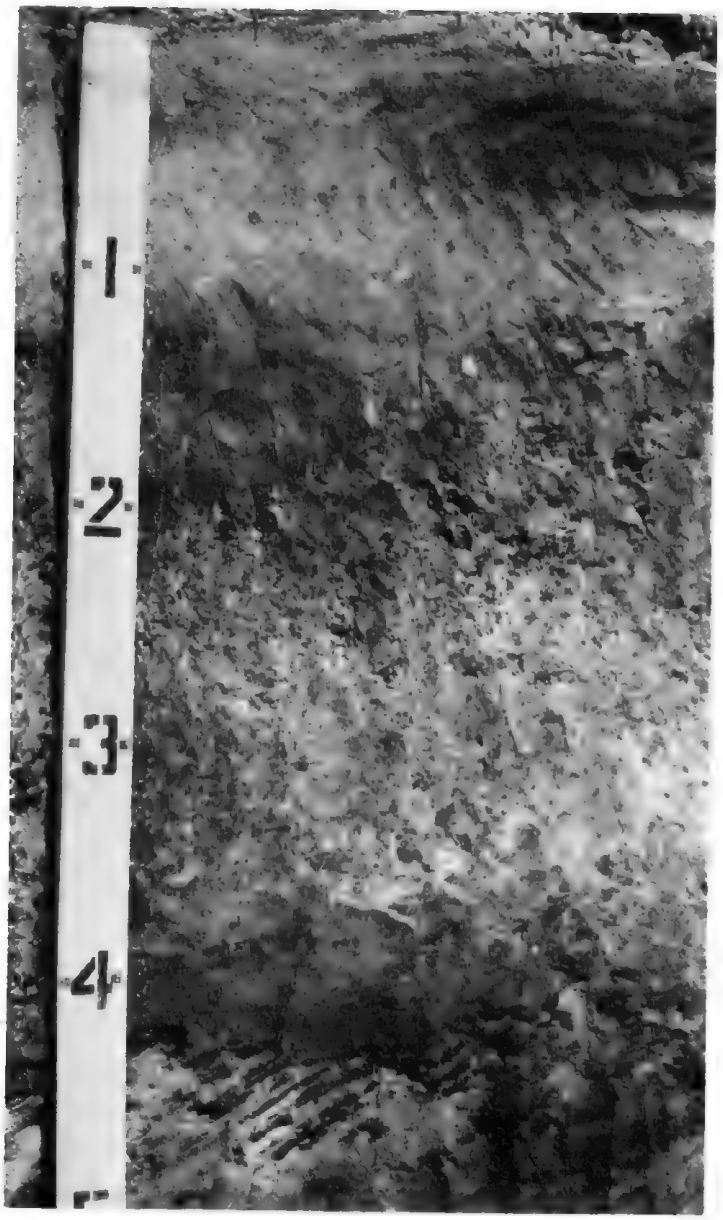

Figure 2.—Profile of Altavista fine sandy loam, 0 to 3 percent slopes. Gray mottles indicate seasonal wetness below a depth of 1.5 to 2.5 feet in this moderately well drained soil.

Figure 3.—Soybeans grow well on Aycock very fine sandy loam, 0 to 2 percent slopes.

Figure 4.—Peanuts and corn grow well on Aycock very fine sandy loam, 0 to 2 percent slopes. Aycock soils are well drained and are among the best for farming in Edgecombe County.

Figure 5.—Peanuts on Conetoe loamy sand, 0 to 4 percent slopes.

Figure 6.—Tobacco on Conetoe loamy sand, 0 to 4 percent slopes.

Figure 7.—Corn and other crops are subject to flood damage in areas of Congaree silt loam.

Figure 8.—Corn on Goldsboro fine sandy loam, 0 to 2 percent slopes.

Figure 9.—Norfolk loamy sand, 0 to 2 percent slopes, has high potential for corn and small grains.

Figure 10.—Standing water on Roanoke loam killed part of this stand of soybeans. Land smoothing and grading would provide better surface drainage and prevent crop loss.

Figure 11.—State loamy sand, 0 to 4 percent slopes, is an excellent soil for cotton.

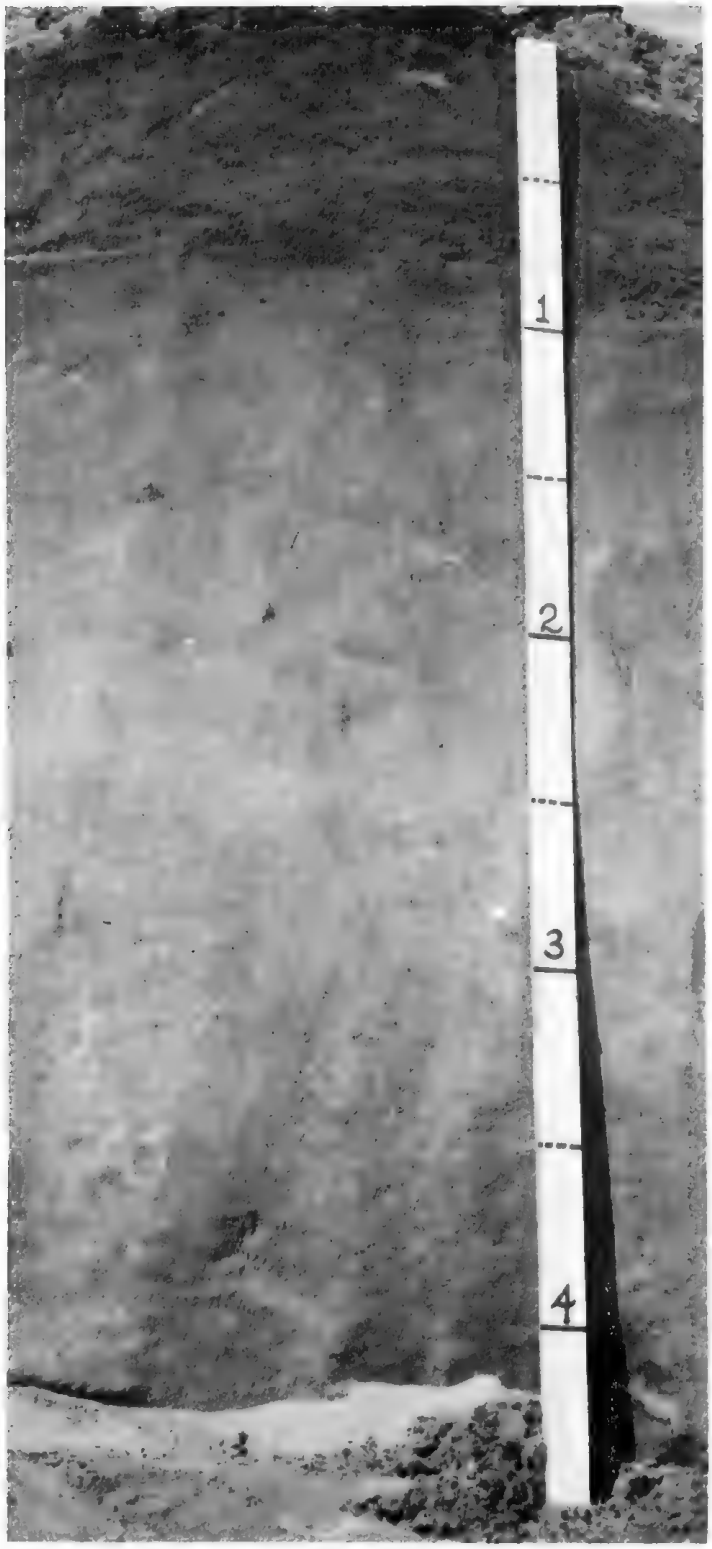

Figure 12.—Profile of Tarboro loamy sand 0 to 6 percent slopes. This soil is somewhat excessively drained and pervious and has a very low available water capacity. It is, however, subject to flooding.

Figure 13.—Erosion on a hillside of Duplin sandy loam, 2 to 5 percent slopes. The soil was left unprotected after clearing.

Figure 14.—Soil blowing is damaging this field of unprotected Wagram loamy sand, 0 to 6 percent slopes.

Figure 15.—Dry weather damages corn on Conetoe loamy sand, 0 to 4 percent slopes.

Figure 16.—This pond in an area of Tarboro loamy sand, 0 to 6 percent slopes, was once a sand pit.

Figure 17.—The abundant grass cover on both banks of the Ballahack Canal provides habitat for wetland wildlife. Aquatic growth provides shelter for fish.

TABLES

TABLE 1.--TEMPERATURE AND PRECIPITATION

Month	Temperature[1]						Precipitation[1]				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days[2]	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	52.1	30.2	39.4	76	10	155	3.78	2.56	4.88	8	2.8
February---	54.2	31.9	43.1	78	13	23	4.12	2.20	5.67	8	1.2
March------	62.1	38.7	50.4	87	22	126	4.04	2.87	5.11	8	.9
April------	73.8	47.8	60.9	92	30	327	3.08	1.90	4.14	6	.0
May--------	80.7	56.6	68.7	95	38	580	3.44	2.30	4.47	7	.0
June-------	86.8	64.2	75.5	100	48	765	4.55	2.36	6.32	7	.0
July-------	89.8	68.5	79.2	99	55	905	5.14	3.05	7.00	8	.0
August-----	88.7	67.8	78.3	98	54	877	6.38	3.51	8.71	8	.0
September--	83.7	61.4	72.6	96	43	678	4.17	1.93	5.99	5	.0
October----	73.9	50.2	62.1	90	28	375	3.23	1.00	4.99	5	.0
November---	63.7	39.2	51.5	82	21	94	2.93	1.66	3.95	5	.0
December---	54.6	32.3	43.5	76	12	62	3.37	1.93	4.53	7	1.1
Year-----	72.0	49.1	60.4	102	8	4,967	48.23	42.95	53.32	82	6.0

[1]Recorded in the period 1951-73 at Tarboro, N.C.

[2]A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

Probability	Temperature[1]		
	24° F or lower	28° F or lower	32° F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	March 28	April 7	April 25
2 years in 10 later than--	March 19	April 1	April 18
5 years in 10 later than--	March 1	March 21	April 6
First freezing temperature in fall:			
1 year in 10 earlier than--	November 5	October 28	October 15
2 years in 10 earlier than--	November 12	November 1	October 20
5 years in 10 earlier than--	November 24	November 10	October 30

[1]Recorded in the period 1951-73 at Tarboro, N.C.

TABLE 3.--GROWING SEASON LENGTH

Probability	Daily minimum temperature during growing season[1]		
	Higher than 24° F	Higher than 28° F	Higher than 32° F
	Days	Days	Days
9 years in 10	231	211	179
8 years in 10	243	218	188
5 years in 10	267	233	206
2 years in 10	291	247	223
1 year in 10	303	254	232

[1]Recorded in the period 1951-73 at Tarboro, N.C.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
AaA	Altavista fine sandy loam, 0 to 3 percent slopes	14,715	4.5
AuB	Autryville loamy sand, 0 to 6 percent slopes	3,475	1.1
AyA	Aycock very fine sandy loam, 0 to 2 percent slopes	6,223	1.9
AyB	Aycock very fine sandy loam, 2 to 6 percent slopes	10,615	3.2
Ba	Ballahack fine sandy loam	4,251	1.3
BB	Bibb soils	15,461	4.7
BnB	Blanton sand, 0 to 6 percent slopes	306	0.1
Ca	Cape Fear loam	4,114	1.3
Cc	Chewacla silt loam	1,956	0.6
CeB	Conetoe loamy sand, 0 to 4 percent slopes	7,584	2.3
Cn	Congaree silt loam	2,379	0.7
Co	Coxville sandy loam	960	0.3
DgA	Dogue fine sandy loam, 0 to 3 percent slopes	6,432	2.0
DpA	Duplin sandy loam, 0 to 2 percent slopes	1,816	0.6
DpB	Duplin sandy loam, 2 to 5 percent slopes	3,326	1.0
DuB	Duplin-Urban land complex, 0 to 5 percent slopes	380	0.1
ExA	Exum very fine sandy loam, 0 to 2 percent slopes	9,498	2.9
Fo	Foreston loamy sand, 0 to 2 percent slopes	9,264	2.8
GoA	Goldsboro fine sandy loam, 0 to 2 percent slopes	24,867	7.6
GpA	Goldsboro-Urban land complex, 0 to 2 percent slopes	941	0.3
Gr	Grantham very fine sandy loam	4,869	1.5
Gt	Grantham-Urban land complex	806	0.2
GyC	Gritney fine sandy loam, 6 to 10 percent slopes	994	0.3
GyD	Gritney fine sandy loam, 10 to 15 percent slopes	414	0.1
Jo	Johns fine sandy loam	1,323	0.4
JS	Johnston soils	2,314	0.7
KeB	Kenansville loamy sand, 0 to 4 percent slopes	339	0.1
Lu	Lumbee fine sandy loam	3,270	1.0
Ly	Lynchburg fine sandy loam	5,535	1.7
MaA	Marlboro sandy loam, 0 to 2 percent slopes	1,376	0.4
MaB	Marlboro sandy loam, 2 to 6 percent slopes	1,938	0.6
Me	Meggett loam	2,524	0.8
Na	Nahunta very fine sandy loam	749	0.2
NoA	Norfolk loamy sand, 0 to 2 percent slopes	11,384	3.5
NoB	Norfolk loamy sand, 2 to 6 percent slopes	31,932	9.8
NoC	Norfolk loamy sand, 6 to 10 percent slopes	388	0.1
NuB	Norfolk-Urban land complex, 0 to 6 percent slopes	1,549	0.5
Pa	Pactolus loamy sand	1,277	0.4
Pt	Pits	713	0.2
Pu	Portsmouth fine sandy loam	6,737	2.1
Ra	Rains fine sandy loam	32,114	9.8
Ro	Roanoke loam	27,964	8.6
StB	State loamy sand, 0 to 4 percent slopes	7,298	2.2
TaB	Tarboro loamy sand, 0 to 6 percent slopes	14,312	4.4
Ur	Urban land	616	0.2
WaB	Wagram loamy sand, 0 to 6 percent slopes	16,327	5.0
WaC	Wagram loamy sand, 6 to 10 percent slopes	1,164	0.4
WaD	Wagram loamy sand, 10 to 15 percent slopes	486	0.1
We	Wahee fine sandy loam	2,893	0.9
Wh	Wehadkee silt loam	5,694	1.7
WkB	Wickham sandy loam, 0 to 4 percent slopes	7,823	2.4
	Water	1,355	0.4
	Total	327,040	100.0

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE

[Yields are those that can be expected under a high level of management. Absence of a yield figure indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Soil name and map symbol	Corn	Cotton lint	Tobacco	Peanuts	Soybeans	Wheat	Pasture
	Bu	Lb	Lb	Lb	Bu	Bu	AUM*
AaA---- Altavista	120	550	2,600	3,500	45	55	9.0
AuB---- Autryville	75	600	2,200	3,000	30	35	9.0
AyA---- Aycock	120	750	2,800	3,600	45	60	10.5
AyB---- Aycock	105	700	2,700	3,500	40	55	10.0
Ba---- Ballahack	130	---	---	---	40	50	9.0
BB---- Bibb	90	---	---	---	30	---	8.0
BnB---- Blanton	60	---	2,000	2,200	20	---	8.0
Ca---- Cape Fear	120	---	---	---	45	45	11.0
Cc---- Chewacla	80	---	---	---	30	---	9
CeB---- Conetoe	70	---	2,000	2,700	20	35	9.0
Cn---- Congaree	125	---	---	---	45	50	10.0
Co---- Coxville	105	---	---	---	40	45	9
DgA---- Dogue	125	700	2,600	3,700	45	60	9.5
DpA---- Duplin	110	750	2,800	3,300	45	60	10.0
DpB---- Duplin	100	750	2,800	3,300	45	60	9.0
DuB---- Duplin	---	---	---	---	---	---	---
ExA---- Exum	125	750	3,000	3,400	50	60	11.0
Fo---- Foreston	90	700	2,600	3,500	35	40	10.0
GoA---- Goldsboro	125	700	3,000	3,600	45	60	11.5
GpA---- Goldsboro	---	---	---	---	---	---	---
Gr---- Grantham	125	---	---	---	45	45	10.5

See footnotes at end of table

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn	Cotton lint	Tobacco	Peanuts	Soybeans	Wheat	Pasture
	Bu	Lb	Lb	Lb	Bu	Bu	AUM*
Gt---- Grantham	---	---	---	---	---	---	---
GyC---- Gritney	60	---	---	1,500	20	---	5.5
GyD---- Gritney	---	---	---	---	---	---	5.0
Jo---- Johns	120	650	2,700	2,800	45	50	9.0
JS---- Johnston	---	---	---	---	---	---	---
KeB---- Kenansville	70	550	2,000	2,400	20	35	9.0
Lu---- Lumbee	110	---	---	---	45	45	9.0
Ly---- Lynchburg	115	675	2,800	2,800	45	50	10.0
MaA---- Marlboro	100	1,000	2,500	3,300	40	60	10.0
MaB---- Marlboro	100	1,000	2,400	3,000	40	50	10.0
Me---- Meggett	90	---	---	---	35	---	8.0
Na---- Nahunta	120	675	2,800	2,800	45	50	10.5
NoA---- Norfolk	110	700	3,000	4,000	40	60	10.5
NoB---- Norfolk	100	650	2,900	3,700	35	55	10.0
NoC---- Norfolk	90	600	2,700	3,300	30	50	9.5
NuB---- Norfolk	---	---	---	---	---	---	---
Pa---- Pactolus	65	---	1,800	2,200	25	---	6.0
Pt**. Pits							
Pu---- Portsmouth	105	---	---	---	45	50	10.0
Ra---- Rains	110	450	2,300	---	45	45	9.0
Ro---- Roanoke	100	---	---	---	40	45	6.8
StB---- State	130	750	3,000	3,300	45	60	9.5
TaB---- Tarboro	50	---	---	2,000	20	---	6.0

See footnotes at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn	Cotton lint	Tobacco	Peanuts	Soybeans	Wheat	Pasture
	Bu	Lb	Lb	Lb	Bu	Bu	AUM*
Ur**. Urban land							
WaB---------- Wagram	75	550	2,400	2,900	25	40	8.5
WaC---------- Wagram	70	500	2,100	2,500	20	30	7.5
WaD---------- Wagram	---	---	---	---	---	---	6.5
We---------- Wahee	90	---	---	---	35	40	10.0
Wh---------- Wehadkee	---	---	---	---	---	---	8.5
WkB---------- Wickham	115	750	2,600	3,300	35	50	9.5

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available or that it was not applicable to rate the soil for the features shown in this table. Site index was calculated at age 30 for eastern cottonwood, at age 35 for American sycamore, and at age 50 for all other species]

Soil name and map symbol	Ordination symbol	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Common trees	Site index	
AaA---- Altavista	2w	Slight	Moderate	Slight	Loblolly pine----	91	Loblolly pine,
					Longleaf pine----	84	yellow-poplar,
					Shortleaf pine----	77	sweetgum,
					Sweetgum----	84	American sycamore,
					White oak----	---	cherrybark oak.
AuB---- Autryville	3s	Slight	Moderate	Moderate	Loblolly pine----	80	Loblolly pine,
					Slash pine----	83	slash pine,
					Longleaf pine----	65	longleaf pine.
AyA, AyB---- Aycock	2o	Slight	Slight	Slight	Slash pine----	89	Slash pine,
					Loblolly pine----	89	loblolly pine,
					Longleaf pine----	75	longleaf pine.
					Southern red oak----	80	
					Sweetgum----	90	
Ba---- Ballahack	1w	Slight	Severe	Severe	Water oak----	100	Loblolly pine,*
					Sweetgum----	111	slash pine,*
					Pond pine----	80	sweetgum,*
					Loblolly pine----	96	water tupelo.
					Yellow-poplar----	---	
					Baldcypress----	---	
BB**---- Bibb	2w	Slight	Severe	Severe	Loblolly pine----	90	Eastern cottonwood,*
					Sweetgum----	90	loblolly pine,*
					Water oak----	90	sweetgum,*
							yellow-poplar *
BnB---- Blanton	3s	Slight	Moderate	Moderate	Slash pine----	80	Slash pine.
					Loblolly pine----	80	
					Longleaf pine----	70	
Ca---- Cape Fear	2w	Slight	Severe	Severe	Sweetgum----	90	Loblolly pine,*
					Loblolly pine----	90	water tupelo,
					Water oak----	90	American sycamore,*
					Water tupelo----	---	sweetgum,*
					Baldcypress----	---	slash pine.*
					Swamp tupelo----	---	
Cc---- Chewacla	1w	Slight	Moderate	Moderate	Loblolly pine----	96	Loblolly pine,
					Yellow-poplar----	104	slash pine,
					American sycamore----	90	American sycamore,
					Sweetgum----	97	yellow-poplar,
					Water oak----	86	sweetgum,
					Eastern cottonwood----	100	green ash.
					Green ash----	97	
					Southern red oak----	90	
CeB---- Conetoe	3s	Slight	Moderate	Moderate	Loblolly pine----	80	Slash pine,
					Longleaf pine----	65	loblolly pine.
Cn---- Congaree	1o	Slight	Slight	Slight	Sweetgum----	100	Loblolly pine,
					Yellow-poplar----	107	slash pine,
					Cherrybark oak----	107	yellow-poplar,
					Loblolly pine----	96	American sycamore,
					Eastern cottonwood----	107	black walnut,
					American sycamore----	89	cherrybark oak,
					Willow oak----	95	eastern cottonwood,
					Black walnut----	---	sweetgum.

See footnotes at end of table.

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Common trees	Site index	
Co Coxville	2w	Slight	Severe	Severe	Loblolly pine Slash pine Longleaf pine Sweetgum Water oak Willow oak Swamp tupelo	90 90 71 90 90 --- ---	Loblolly pine,* slash pine,* sweetgum,* American sycamore.*
DgA Dogue	2w	Slight	Moderate	Slight	Loblolly pine Northern red oak Sweetgum Yellow-poplar Southern red oak	90 80 90 90 80	Loblolly pine.
DpA, DpB Duplin	2w	Slight	Moderate	Moderate	Loblolly pine Slash pine Sweetgum Black tupelo Southern red oak White oak Yellow-poplar	90 90 90 --- --- --- 100	Loblolly pine, slash pine, yellow-poplar, American sycamore, sweetgum.
ExA Exum	2w	Slight	Moderate	Slight	Loblolly pine Longleaf pine Sweetgum Yellow-poplar Southern red oak White oak	90 77 90 100 --- ---	Loblolly pine, slash pine, yellow-poplar, sweetgum, American sycamore.
Fo Foreston	2w	Slight	Moderate	Slight	Slash pine Loblolly pine Longleaf pine	90 90 75	Slash pine, loblolly pine.
GoA Goldsboro	2w	Slight	Moderate	Slight	Loblolly pine Slash pine Longleaf pine Sweetgum Southern red oak White oak	90 93 77 90 --- ---	Loblolly pine, slash pine, yellow-poplar, American sycamore, sweetgum.
Gr Grantham	2w	Slight	Severe	Severe	Loblolly pine Slash pine Sweetgum Southern red oak White oak Water oak	95 95 96 --- --- 90	Loblolly pine,* slash pine,* sweetgum,* American sycamore, yellow-poplar.*
GyC, GyD Gritney	3o	Slight	Slight	Slight	Slash pine Loblolly pine Longleaf pine	80 80 65	Slash pine, loblolly pine.
Jo Johns	2w	Slight	Moderate	Slight	Loblolly pine Sweetgum Slash pine	86 90 86	Loblolly pine, slash pine.
JS** Johnston	1w	Slight	Severe	Severe	Loblolly pine Sweetgum Water oak	97 111 103	Loblolly pine,* slash pine,* baldcypress,* yellow-poplar,* sweetgum,* green ash,* water tupelo.
KeB Kenansville	3s	Slight	Moderate	Moderate	Loblolly pine Longleaf pine	80 65	Loblolly pine, slash pine.

See footnotes at end of table.

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Common trees	Site index	
Lu Lumbee	2w	Slight	Severe	Severe	Loblolly pine Slash pine Pond pine Water tupelo Sweetgum White oak	94 91 75 70 90 ---	Loblolly pine, slash pine, water tupelo, sweetgum.
Ly Lynchburg	2w	Slight	Moderate	Slight	Slash pine Loblolly pine Longleaf pine Yellow-poplar Sweetgum Southern red oak White oak Blackgum	91 86 74 92 90 --- --- ---	Slash pine, loblolly pine, American sycamore, sweetgum.
MaA, MaB Marlboro	3o	Slight	Slight	Slight	Loblolly pine Slash pine Longleaf pine	82 80 62	Slash pine, loblolly pine.
Me Meggett	1w	Slight	Severe	Severe	Slash pine Loblolly pine Pond pine	100 100 75	Slash pine,* loblolly pine.*
Na Nahunta	2w	Slight	Moderate	Moderate	Loblolly pine Slash pine Sweetgum Yellow-poplar Southern red oak White oak	87 86 90 100 --- ---	Loblolly pine, slash pine, yellow-poplar, American sycamore, cherrybark oak.
NoA, NoB, NoC Norfolk	2o	Slight	Slight	Slight	Loblolly pine Longleaf pine Slash pine	86 68 86	Slash pine, loblolly pine.
Pa Pactolus	3w	Slight	Moderate	Moderate	Loblolly pine Longleaf pine Slash pine	84 70 83	Loblolly pine, slash pine.
Pu Portsmouth	2w	Slight	Severe	Severe	Loblolly pine Sweetgum Slash pine Pond pine	86 90 90 80	Loblolly pine,* slash pine,* American sycamore.*
Ra Rains	2w	Slight	Severe	Severe	Loblolly pine Slash pine Sweetgum	94 91 90	Loblolly pine,* slash pine.*
Ro Roanoke	2w	Slight	Severe	Severe	Loblolly pine Sweetgum Water oak Willow oak Yellow-poplar	85 86 93 93 74	Loblolly pine,* slash pine,* green ash,* sweetgum,* American sycamore.*
StB State	1o	Slight	Slight	Slight	Northern red oak Yellow-poplar Loblolly pine	85 105 96	Yellow-poplar, loblolly pine.
TaB Tarboro	3s	Slight	Moderate	Moderate	Loblolly pine Longleaf pine Slash pine	80 70 80	Loblolly pine, slash pine.
WaB, WaC, WaD Wagram	3s	Slight	Moderate	Moderate	Loblolly pine Slash pine Longleaf pine	82 80 67	Loblolly pine, slash pine, longleaf pine.

See footnotes at end of table.

TABLE 6.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Common trees	Site index	
We---------- Wahee	2w	Slight	Moderate	Moderate	Loblolly pine----------	86	Loblolly pine, slash pine, sweetgum, American sycamore, water oak.
					Slash pine----------	86	
					Sweetgum----------	90	
Wh---------- Wehadkee	1w	Slight	Severe	Severe	Loblolly pine----------	102	Loblolly pine,* American sycamore,* yellow-poplar,* green ash,* sweetgum,* eastern cottonwood,* cherrybark oak.*
					Sweetgum----------	83	
					Yellow-poplar----------	100	
					Willow oak----------	90	
					Green ash----------	96	
					Water oak----------	86	
					White ash----------	88	
WkB---------- Wickham	2o	Slight	Slight	Slight	Loblolly pine----------	90	Loblolly pine, slash pine, yellow-poplar.
					Slash pine----------	90	
					Yellow-poplar----------	100	
					Southern red oak--------	---	

* Potential productivity can be attained and tree planting is feasible only where surface drainage is adequate.

** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 7.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
AaA---------- Altavista	Severe: wetness, cutbanks cave.	Moderate: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.
AuB---------- Autryville	Moderate: cutbanks cave.	Slight----------	Slight----------	Slight----------	Slight.
AyA---------- Aycock	Slight----------	Slight----------	Slight----------	Slight----------	Moderate: low strength.
AyB---------- Aycock	Slight----------	Slight----------	Slight----------	Moderate: slope.	Moderate: low strength.
Ba---------- Ballahack	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
BB*---------- Bibb	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.
BnB---------- Blanton	Severe: cutbanks cave.	Slight----------	Slight----------	Slight----------	Slight.
Ca---------- Cape Fear	Severe: wetness, floods, too clayey.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.
Co---------- Chewacla	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness.
CeB---------- Conetoe	Severe: cutbanks cave.	Slight----------	Slight----------	Slight----------	Slight.
Cn---------- Congaree	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.
Co---------- Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, low strength.
DgA---------- Dogue	Severe: wetness, too clayey.	Severe: low strength.	Severe: wetness, low strength.	Severe: low strength.	Severe: low strength.
DpA, DpB---------- Duplin	Moderate: too clayey, wetness.	Moderate: shrink-swell.	Severe: wetness, shrink-swell.	Moderate: wetness, shrink-swell.	Severe: low strength.
DuB*: Duplin----------	Moderate: too clayey, wetness.	Moderate: shrink-swell.	Severe: wetness, shrink-swell.	Moderate: wetness, shrink-swell.	Severe: low strength.
Urban land.					
ExA---------- Exum	Moderate: wetness.	Moderate: low strength.	Moderate: wetness, low strength.	Moderate: wetness, low strength.	Moderate: low strength.

See footnote at end of table.

TABLE 7.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
Fo Foreston	Moderate: wetness, cutbanks cave.	Slight	Moderate: wetness.	Moderate: wetness.	Slight.
GoA Goldsboro	Moderate: wetness.	Slight	Moderate: wetness.	Moderate: wetness.	Slight.
GpA*: Goldsboro	Moderate: wetness.	Slight	Moderate: wetness.	Moderate: wetness.	Slight.
Urban land.					
Gr Grantham	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Gt*: Grantham	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Urban land.					
GyC, GyD Gritney	Moderate: too clayey.	Severe: shrink-swell, low strength.	Severe: shrink-swell, low strength.	Severe: shrink-swell, slope.	Severe: shrink-swell, low strength.
Jo Johns	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.
JS* Johnston	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.
KeB Kenansville	Severe: cutbanks cave.	Slight	Slight	Slight	Slight.
Lu Lumbee	Severe: wetness.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness.
Ly Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, corrosive.	Moderate: wetness.
MaA Marlboro	Moderate: too clayey.	Slight	Slight	Slight	Moderate: low strength.
MaB Marlboro	Moderate: too clayey.	Slight	Slight	Moderate: slope.	Moderate: low strength.
Me Meggett	Severe: too clayey, floods, wetness.	Severe: shrink-swell, floods, wetness.	Severe: shrink-swell, floods, wetness.	Severe: shrink-swell, floods, wetness.	Severe: shrink-swell, floods, wetness.
Na Nahunta	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.
NoA Norfolk	Moderate: wetness.	Slight	Moderate: wetness.	Moderate: wetness.	Slight.
NoB Norfolk	Moderate: wetness.	Slight	Moderate: wetness.	Moderate: slope.	Slight.
NoC Norfolk	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.

See footnote at end of table.

TABLE 7.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets
NuB*: Norfolk	Slight	Slight	Slight	Slight	Slight.
Urban land					
Pa Pactolus	Severe: wetness, cutbanks cave.	Moderate: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.
Pt*. Pits					
Pu Portsmouth	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Ra Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Ro Roanoke	Severe: floods, too clayey, wetness.	Severe: floods, low strength, wetness.	Severe: floods, low strength, wetness.	Severe: floods, low strength, wetness.	Severe: floods, low strength, wetness.
StB State	Slight	Slight	Slight	Slight	Moderate: low strength.
TaB Tarboro	Severe: cutbanks cave.	Severe: floods.	Severe: floods.	Severe: floods.	Slight.
Ur*. Urban land					
WaB Wagram	Slight	Slight	Slight	Slight	Slight.
WaC, WaD Wagram	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.
We Wahee	Severe: wetness, floods, too clayey.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.	Severe: wetness, floods, low strength.	Severe: floods, low strength.
Wh Wehadkee	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.
WkB Wickham	Slight	Slight	Slight	Slight	Slight.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 8.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," "good," and "fair." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Septic tank absorption fields	Waste treatment lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
AaA--Altavista	Severe: wetness.	Severe: wetness.	Severe: wetness, seepage.	Severe: wetness, seepage.	Good.
AuB--Autryville	Slight	Severe: seepage.	Slight	Slight	Fair: too sandy.
AyA--Aycock	Moderate: percs slowly.	Moderate: seepage.	Slight	Slight	Fair: too clayey.
AyB--Aycock	Moderate: percs slowly.	Moderate: seepage, slope.	Slight	Slight	Fair: too clayey.
Ba--Ballahack	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Poor: wetness.
BB*--Bibb	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Poor: wetness.
BnB--Blanton	Slight	Severe: seepage.	Severe: too sandy.	Slight	Poor: too sandy, seepage.
Ca--Cape Fear	Severe: wetness, floods, percs slowly.	Severe: floods, wetness.	Severe: floods, wetness, too clayey.	Severe: floods, wetness.	Poor: wetness, too clayey.
Cc--Chewacla	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Good.
CeB--Conetoe	Slight	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too sandy.
Cn--Congaree	Severe: floods.	Severe: floods.	Severe: floods.	Severe: floods.	Good.
Co--Coxville	Severe: wetness, percs slowly.	Slight	Severe: wetness.	Severe: wetness.	Poor: wetness.
DgA--Dogue	Severe: percs slowly, wetness.	Severe: seepage, wetness.	Severe: too clayey, seepage, wetness.	Severe: wetness.	Poor: too clayey, hard to pack.
DpA--Duplin	Severe: wetness, percs slowly.	Slight	Severe: wetness.	Severe: wetness.	Fair: too clayey.
DpB--Duplin	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
DuB*: Duplin	Severe: wetness, percs slowly.				
Urban land					

See footnote at end of table.

TABLE 8.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Waste treatment lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
ExA---------- Exum	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
Fo---------- Foreston	Severe: wetness.	Severe: wetness, seepage.	Severe: wetness, seepage.	Severe: wetness, seepage.	Good.
GoA---------- Goldsboro	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Good.
GpA*: Goldsboro----------	Severe: wetness.				
Urban land.					
Gr---------- Grantham	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Gt*: Grantham----------	Severe: wetness, percs slowly.				
Urban land.					
GyC---------- Gritney	Severe: percs slowly.	Severe: slope.	Moderate: too clayey.	Moderate: slope.	Fair: too clayey.
GyD---------- Gritney	Severe: percs slowly.	Severe: slope.	Moderate: too clayey.	Moderate: slope.	Fair: too clayey.
Jo---------- Johns	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Good.
JS*---------- Johnston	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Poor: wetness.
KeB---------- Kenansville	Slight-------	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too sandy.
Lu---------- Lumbee	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Ly---------- Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Good.
MaA---------- Marlboro	Moderate: percs slowly.	Moderate: seepage.	Moderate: too clayey.	Slight----------	Fair: too clayey.
MaB---------- Marlboro	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight----------	Fair: too clayey.
Me---------- Meggett	Severe: percs slowly, wetness, floods.	Severe: wetness.	Severe: too clayey, floods, wetness.	Severe: floods, wetness.	Poor: too clayey, wetness.
Na---------- Nahunta	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: too clayey.
NoA---------- Norfolk	Moderate: wetness.	Moderate: seepage.	Severe: wetness.	Moderate: wetness.	Good.

See footnote at end of table.

TABLE 8.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Waste treatment lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
NoB---- Norfolk	Moderate: wetness.	Moderate: slope, seepage.	Severe: wetness.	Moderate: wetness.	Good.
NoC---- Norfolk	Moderate: slope.	Severe: slope.	Slight----	Moderate: slope.	Fair: slope.
NuB*: Norfolk----	Moderate: wetness.				
Urban land.					
Pa---- Pactolus	Severe: wetness.	Severe: wetness, seepage.	Severe: seepage, wetness.	Severe: seepage, wetness.	Fair: too sandy.
Pt*. Pits					
Pu---- Portsmouth	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Ra---- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Ro---- Roanoke	Severe: floods, percs slowly, wetness.	Slight----	Severe: floods, too clayey, wetness.	Severe: floods, wetness.	Poor: hard to pack, too clayey, wetness.
StB---- State	Slight----	Severe: seepage.	Severe: seepage.	Severe: seepage.	Good.
TaB---- Tarboro	Moderate: floods.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too sandy, area reclaim.
Ur*. Urban land					
WaB---- Wagram	Slight----	Severe: seepage.	Slight----	Slight----	Fair: too sandy.
WaC, WaD---- Wagram	Moderate: slope.	Severe: slope, seepage.	Slight----	Moderate: slope.	Fair: slope, too sandy.
We---- Wahee	Severe: floods, wetness, percs slowly.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Poor: too clayey, wetness.
Wh---- Wehadkee	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Severe: floods, wetness.	Poor: wetness.
WkB---- Wickham	Slight----	Moderate: slope, seepage.	Severe: seepage.	Slight----	Good.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 9.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," and "poor." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Roadfill	Sand	Topsoil
AaA---- Altavista	Fair: low strength.	Poor: excess fines.	Good.
AuB---- Autryville	Good----	Poor: excess fines.	Poor: too sandy.
AyA, AyB---- Aycock	Fair: low strength.	Unsuited: excess fines.	Fair: thin layer.
Ba---- Ballahack	Poor: wetness.	Poor: excess fines.	Poor: wetness.
BB*---- Bibb	Poor: wetness.	Unsuited: excess fines.	Poor: wetness.
BnB---- Blanton	Good----	Fair: excess fines.	Poor: too sandy.
Ca---- Cape Fear	Poor: wetness, low strength.	Unsuited: excess fines.	Poor: wetness.
Cc---- Chewacla	Poor: wetness.	Unsuited: excess fines.	Good.
CeB---- Conetoe	Good----	Fair: excess fines.	Poor: too sandy.
Cn---- Congaree	Fair: low strength.	Unsuited: excess fines.	Good.
Co---- Coxville	Poor: wetness, low strength.	Unsuited: excess fines.	Poor: wetness.
DgA---- Dogue	Poor: low strength, area reclaim.	Poor: excess fines.	Fair: thin layer.
DpA, DpB---- Duplin	Poor: low strength.	Unsuited: excess fines.	Fair: thin layer.
DuB*: Duplin.			
Urban land.			
ExA---- Exum	Poor: low strength.	Unsuited: excess fines.	Fair: thin layer.
Fo---- Foreston	Good----	Poor: excess fines.	Poor: too sandy.
GoA---- Goldsboro	Good----	Unsuited: excess fines.	Good.
GpA*: Goldsboro.			
Urban land.			

See footnote at end of table.

TABLE 9.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Topsoil
Gr---------- Grantham	Poor: wetness.	Unsuited: excess fines.	Poor: wetness.
Gt*: Grantham.			
Urban land.			
GyC, GyD---------- Gritney	Poor: shrink-swell, low strength.	Unsuited: excess fines.	Poor: thin layer.
Jo---------- Johns	Fair: wetness.	Poor: excess fines.	Fair: thin layer.
JS*---------- Johnston	Poor: wetness, excess humus.	Unsuited: excess fines.	Poor: wetness.
KeB---------- Kenansville	Good----------	Fair: excess fines.	Poor: too sandy.
Lu---------- Lumbee	Poor: wetness.	Poor: excess fines.	Poor: wetness.
Ly---------- Lynchburg	Fair: wetness.	Unsuited: excess fines.	Good.
MaA, MaB---------- Marlboro	Fair: low strength.	Unsuited: excess fines.	Fair: thin layer.
Me---------- Meggett	Poor: shrink-swell, wetness.	Unsuited: excess fines.	Poor: thin layer, wetness.
Na---------- Nahunta	Fair: low strength, wetness.	Unsuited: excess fines.	Fair: thin layer.
NoA, NoB---------- Norfolk	Good----------	Unsuited: excess fines.	Good.
NoC---------- Norfolk	Good----------	Unsuited: excess fines.	Fair: slope.
NuB*: Norfolk.			
Urban land.			
Pa---------- Pactolus	Fair: wetness.	Fair: excess fines.	Poor: too sandy.
Pt*. Pits			
Pu---------- Portsmouth	Poor: wetness.	Poor: excess fines.	Poor: wetness.
Ra---------- Rains	Poor: wetness.	Unsuited: excess fines.	Poor: wetness.

See footnote at end of table.

TABLE 9.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Topsoil
Ro--- Roanoke	Poor: area reclaim, low strength, wetness.	Poor: excess fines.	Poor: area reclaim, thin layer, wetness.
StB--- State	Fair: low strength.	Unsuited: excess fines.	Fair: too sandy.
TaB--- Tarboro	Good	Fair: excess fines.	Poor: too sandy.
Ur*. Urban land			
WaB, WaC, WaD--- Wagram	Good	Poor: excess fines.	Poor: too sandy.
We--- Wahee	Poor: low strength, wetness.	Unsuited: excess fines.	Poor: wetness, area reclaim.
Wh--- Wehadkee	Poor: wetness.	Poor: excess fines.	Poor: wetness.
WkB--- Wickham	Good	Unsuited: excess fines.	Fair: thin layer.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 10.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated]

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
AaA---- Altavista	Moderate: seepage.	Moderate: thin layer, wetness.	Moderate: deep to water, slow refill.	Favorable----	Not needed----	Favorable.
AuB---- Autryville	Severe: seepage.	Severe: seepage.	Severe: no water.	Not needed----	Too sandy----	Droughty.
AyA---- Aycock	Moderate: seepage.	Moderate: piping.	Severe: deep to water.	Not needed----	Not needed----	Favorable.
AyB---- Aycock	Moderate: seepage.	Moderate: piping.	Severe: deep to water.	Not needed----	Favorable----	Favorable.
Ba---- Ballahack	Severe: seepage.	Moderate: excess humus.	Slight----	Wetness, floods, poor outlets.	Not needed----	Not needed.
BB*---- Bibb	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Floods----	Not needed----	Wetness.
BnB---- Blanton	Severe: seepage.	Severe: piping, seepage.	Severe: no water.	Not needed----	Not needed----	Droughty.
Ca---- Cape Fear	Slight----	Moderate: compressible.	Slight----	Floods, percs slowly, poor outlets.	Not needed----	Not needed.
Cc---- Chewacla	Moderate: seepage.	Moderate: piping.	Moderate: deep to water.	Poor outlets, floods.	Not needed----	Not needed.
CeB---- Conetoe	Severe: seepage.	Moderate: piping, seepage.	Severe: deep to water.	Not needed----	Not needed----	Not needed.
Cn---- Congaree	Moderate: seepage.	Moderate: compressible, piping, low strength.	Severe: deep to water.	Not needed----	Not needed----	Not needed.
Co---- Coxville	Slight----	Moderate: compressible.	Slight----	Wetness, percs slowly.	Not needed----	Not needed.
DgA---- Dogue	Moderate: slope, seepage.	Moderate: hard to pack, low strength.	Moderate: deep to water.	Wetness, percs slowly.	Erodes easily, percs slowly, wetness.	Erodes easily, percs slowly, wetness.
DpA---- Duplin	Slight----	Moderate: compressible.	Moderate: deep to water, slow refill.	Percs slowly---	Not needed----	Favorable.
DpB---- Duplin	Slight----	Moderate: compressible.	Moderate: deep to water, slow refill.	Slope----	Favorable----	Favorable.
DuB*: Duplin. Urban land.						
ExA---- Exum	Moderate: seepage.	Moderate: compressible, piping.	Moderate: deep to water.	Favorable----	Not needed----	Favorable.

See footnote at end of table.

TABLE 10.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
Fo---------- Foreston	Severe: seepage.	Moderate: seepage, piping.	Moderate: deep to water.	Cutbanks cave, wetness.	Not needed-----	Not needed.
GoA---------- Goldsboro	Moderate: seepage.	Slight---------	Moderate: deep to water.	Favorable------	Not needed-----	Favorable.
GpA*: Goldsboro.						
Urban land.						
Gr---------- Grantham	Moderate: seepage.	Moderate: compressible, piping.	Moderate: slow refill.	Wetness--------	Not needed-----	Not needed.
Gt*: Grantham.						
Urban land.						
GyC, GyD---------- Gritney	Slight---------	Moderate: hard to pack.	Severe: no water.	Not needed-----	Erodes easily, percs slowly, slope.	Erodes easily, slope, percs slowly.
Jo---------- Johns	Moderate: seepage.	Moderate: seepage.	Moderate: deep to water.	Cutbanks cave	Not needed-----	Not needed.
JS*---------- Johnston	Severe: seepage.	Severe: piping.	Slight---------	Poor outlets, floods.	Not needed-----	Not needed.
KeB---------- Kenansville	Severe: seepage.	Moderate: seepage.	Severe: deep to water.	Not needed-----	Too sandy------	Droughty.
Lu---------- Lumbee	Moderate: seepage.	Moderate: seepage.	Slight---------	Poor outlets, cutbanks cave.	Not needed-----	Not needed.
Ly---------- Lynchburg	Moderate: seepage.	Moderate: piping.	Moderate: deep to water.	Favorable------	Not needed-----	Not needed.
MaA, MaB---------- Marlboro	Moderate: seepage.	Slight---------	Severe: deep to water.	Not needed-----	Favorable------	Favorable.
Me---------- Meggett	Slight---------	Moderate: shrink-swell, thin layer.	Moderate: slow refill.	Percs slowly, wetness, floods.	Not needed-----	Not needed.
Na---------- Nahunta	Moderate: seepage.	Moderate: compressible, piping.	Moderate: deep to water.	Favorable------	Not needed-----	Not needed.
NoA---------- Norfolk	Moderate: seepage.	Slight---------	Severe: deep to water.	Not needed-----	Not needed-----	Favorable.
NoB---------- Norfolk	Moderate: seepage.	Slight---------	Severe: deep to water.	Not needed-----	Favorable------	Favorable.
NoC---------- Norfolk	Moderate: seepage.	Slight---------	Severe: deep to water.	Not needed-----	Favorable------	Slope.
NuB*: Norfolk.						
Urban land.						

See footnote at end of table.

TABLE 10.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
Pa---------- Pactolus	Severe: seepage.	Severe: seepage.	Moderate: deep to water.	Cutbanks cave	Not needed-----	Not needed.
Pt* Pits						
Pu---------- Portsmouth	Moderate: seepage.	Moderate: hard to pack, low strength.	Slight---------	Poor outlets, wetness.	Not needed-----	Rooting depth, wetness.
Ra---------- Rains	Moderate: seepage.	Slight---------	Slight---------	Favorable------	Not needed-----	Not needed.
Ro---------- Roanoke	Slight---------	Severe: compressible, hard to pack, low strength.	Slight---------	Floods, percs slowly, poor outlets.	Not needed-----	Not needed.
StB---------- State	Moderate: seepage.	Slight---------	Severe: no water.	Not needed-----	Favorable------	Favorable.
TaB---------- Tarboro	Severe: seepage.	Severe: piping, seepage.	Severe: deep to water.	Not needed-----	Not needed-----	Not needed.
Ur*. Urban land						
WaB---------- Wagram	Severe: seepage.	Moderate: piping.	Severe: deep to water.	Not needed-----	Too sandy------	Favorable.
WaC, WaD---------- Wagram	Severe: seepage.	Moderate: piping.	Severe: deep to water.	Not needed-----	Slope, too sandy.	Slope.
We---------- Wahee	Slight---------	Severe: wetness.	Severe: slow refill.	Percs slowly, wetness, floods.	Not needed-----	Wetness, percs slowly.
Wh---------- Wehadkee	Moderate: seepage.	Moderate: piping.	Slight---------	Poor outlets, floods.	Not needed-----	Not needed.
WkB---------- Wickham	Moderate: seepage.	Slight---------	Severe: deep to water.	Not needed-----	Favorable------	Favorable.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
AaA---- Altavista	Moderate: wetness.	Slight----	Moderate: wetness.	Slight.
AuB---- Autryville	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy, slope.	Moderate: too sandy.
AyA---- Aycock	Slight----	Slight----	Slight----	Slight.
AyB---- Aycock	Slight----	Slight----	Moderate: slope.	Slight.
Ba---- Ballahack	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
BB*---- Bibb	Severe: floods, wetness.	Severe: wetness, floods.	Severe: floods, wetness.	Severe: floods, wetness.
BnB---- Blanton	Moderate: too sandy.	Moderate: too sandy.	Severe: too sandy.	Severe: too sandy.
Ca---- Cape Fear	Severe: floods, wetness.	Severe: wetness.	Severe: wetness, floods.	Severe: wetness.
Cc---- Chewacla	Severe: wetness, floods.	Moderate: wetness, floods.	Severe: wetness, slope.	Moderate: wetness.
CeB---- Conetoe	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy,	Moderate: too sandy.
Cn---- Congaree	Severe: floods.	Moderate: floods.	Severe: floods.	Moderate: floods.
Co---- Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
DgA---- Dogue	Moderate: percs slowly.	Slight----	Moderate: percs slowly.	Slight.
DpA---- Duplin	Moderate: percs slowly.	Slight----	Moderate: wetness, percs slowly.	Slight.
DpB---- Duplin	Moderate: percs slowly.	Slight----	Moderate: slope, percs slowly.	Slight.
DuB*: Duplin----	Moderate: percs slowly.	Slight----	Moderate: slope, percs slowly.	Slight.
Urban land.				
ExA---- Exum	Slight----	Slight----	Moderate: wetness.	Slight.

See footnote at end of table.

TABLE 11.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
Fo Foreston	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.
GoA Goldsboro	Slight	Slight	Slight	Slight.
GpA*: Goldsboro	Slight	Slight	Slight	Slight.
Urban land.				
Gr Grantham	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Gt*: Grantham	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Urban land.				
GyC Gritney	Moderate: slope, percs slowly.	Moderate: slope.	Severe: slope.	Slight.
GyD Gritney	Moderate: slope, percs slowly.	Moderate: slope.	Severe: slope.	Slight.
Jo Johns	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
JS* Johnston	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
KeB Kenansville	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.
Lu Lumbee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Ly Lynchburg	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.
MaA Marlboro	Slight	Slight	Slight	Slight.
MaB Marlboro	Slight	Slight	Moderate: slope.	Slight.
Me Meggett	Severe: wetness, percs slowly, floods.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Na Nahunta	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
NoA Norfolk	Slight	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.
NoB Norfolk	Slight	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.
NoC Norfolk	Moderate: slope.	Moderate: slope, too sandy.	Severe: slope.	Moderate: too sandy.

See footnote at end of table.

TABLE 11.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails
NuB*: Norfolk	Slight	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.
Urban land.				
Pa--- Pactolus	Moderate: wetness, too sandy.	Moderate: wetness, too sandy.	Moderate: wetness, too sandy.	Moderate: too sandy.
Pt*. Pits				
Pu--- Portsmouth	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Ra--- Rains	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Ro--- Roanoke	Severe: floods, wetness, percs slowly.	Severe: wetness.	Severe: floods, wetness, percs slowly.	Severe: wetness.
StB--- State	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope.	Moderate: too sandy.
TaB--- Tarboro	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy, slope.	Moderate: too sandy.
Ur*. Urban land				
WaB--- Wagram	Moderate: too sandy.	Moderate: too sandy.	Moderate: slope, too sandy.	Moderate: too sandy.
WaC, WaD--- Wagram	Moderate: too sandy, slope.	Moderate: too sandy, slope.	Severe: slope.	Moderate: too sandy.
We--- Wahee	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
Wh--- Wehadkee	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.	Severe: wetness, floods.
WkB--- Wickham	Slight	Slight	Moderate: slope.	Slight.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 12.--WILDLIFE HABITAT POTENTIALS

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the the soil was not rated]

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
AaA, Altavista	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
AuB, Autryville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
AyA, AyB, Aycock	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Ba, Ballahack	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
BB*, Bibb	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
BnB, Blanton	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Ca, Cape Fear	Fair	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
Cc, Chewacla	Very poor.	Poor	Poor	Good	Good	Fair	Fair	Poor	Good	Fair.
CeB, Conetoe	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Fair	Very poor.
Cn, Congaree	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Co, Coxville	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
DgA, Dogue	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
DpA, Duplin	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
DpB, Duplin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
DuB*: Duplin.										
Urban land.										
ExA, Exum	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Fo, Foreston	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
GoA, Goldsboro	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
GpA*: Goldsboro.										
Urban land.										

See footnote at end of table.

TABLE 12.--WILDLIFE HABITAT POTENTIALS--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
Gr---------- Grantham	Good	Good	Good	Good	Good	Poor	Good	Good	Good	Fair
Gt*: Grantham.										
Urban land.										
GyC, GyD---------- Gritney	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor
Jo---------- Johns	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor
JS*---------- Johnston	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
KeB---------- Kenansville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor
Lu---------- Lumbee	Fair	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor
Ly---------- Lynchburg	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
MaA, MaB---------- Marlboro	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor
Me---------- Meggett	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
Na---------- Nahunta	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor
NoA, NoB---------- Norfolk	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor
NoC---------- Norfolk	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor
NuB*: Norfolk.										
Urban land.										
Pa---------- Pactolus	Fair	Fair	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor
Pt*. Pits										
Pu---------- Portsmouth	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
Ra---------- Rains	Fair	Fair	Fair	Good	Good	Good	Good	Fair	Good	Good
Ro---------- Roanoke	Good	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
StB---------- State	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor

See footnote at end of table.

TABLE 12.--WILDLIFE HABITAT POTENTIALS--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
TaB---------- Tarboro	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
Ur*. Urban land										
WaB---------- Wagram	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
WaC, WaD---------- Wagram	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
We---------- Wahee	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
Wh---------- Wehadkee	Very poor	Poor	Poor	Fair	Fair	Good	Fair	Poor	Fair	Fair
WkB---------- Wickham	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 13.--ENGINEERING PROPERTIES AND CLASSIFICATIONS

[The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
AaA---------- Altavista	0-9	Fine sandy loam	ML, CL-ML, SM, SM-SC	A-4	0	95-100	95-100	65-95	35-60	<23	NP-7
	9-40	Clay loam, sandy clay loam, loam.	CL, CL-ML	A-4, A-6, A-7	0	95-100	95-100	60-95	50-75	20-45	5-26
	40-80	Variable--------	---	---	0	---	---	---	---	---	---
AuB---------- Autryville	0-26	Loamy sand------	SP-SM, SM	A-2, A-3	0	100	100	50-75	5-20	---	NP
	26-38	Sandy loam, sandy clay loam.	SM	A-2	0	100	100	50-75	15-30	<20	NP-3
	38-54	Sand, loamy sand	SP-SM, SM	A-2, A-3	0	100	100	50-75	5-20	---	NP
	54-84	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4, A-6	0	100	100	60-80	25-49	15-35	3-15
AyA, AyB---------- Aycock	0-11	Very fine sandy loam.	ML, CL-ML, CL	A-4	0	100	95-100	80-100	51-80	<25	NP-10
	11-90	Clay loam, silty clay loam, loam.	CL	A-4, A-6, A-7	0	100	95-100	90-100	60-90	22-49	8-30
Ba---------- Ballahack	0-35	Fine sandy loam, sandy clay loam.	SM, SC, CL, ML	A-4	0	100	100	60-97	36-70	<35	NP-10
	35-74	Stratified sand to sandy clay.	SM, SC, ML, CL	A-2, A-4, A-6, A-7	0	100	95-100	50-95	15-60	<50	NP-25
BB*---------- Bibb	0-38	Loam----------	SM, SM-SC, ML, CL-ML	A-2, A-4	0-5	95-100	90-100	60-90	30-60	<25	NP-7
	38-66	Sandy loam, loam, silt loam, loamy sand.	SM, SM-SC, ML, CL-ML	A-2, A-4	0-10	60-100	50-100	40-100	30-90	<30	NP-7
BnB---------- Blanton	0-47	Sand----------	SP-SM	A-3, A-2-4	0	100	100	85-100	5-12	---	NP
	47-61	Sandy loam, sand	SM	A-2-4	0	100	100	85-95	20-30	---	NP
	61-83	Sandy clay loam, sandy loam.	SC, SM-SC	A-4, A-2-4	0	100	100	85-95	30-50	18-30	4-10
Ca---------- Cape Fear	0-15	Loam----------	CL, ML, CL-ML	A-4, A-6, A-7	0	100	95-100	85-100	60-90	20-49	NP-15
	15-65	Clay loam, clay, sandy clay loam.	ML, CL, MH, CH	A-7	0	100	95-100	80-100	60-85	41-65	15-35
	65-80	Variable--------	---	---	---	---	---	---	---	---	---
Cc---------- Chewacla	0-16	Silt loam-------	ML	A-4, A-5, A-6, A-7	0	98-100	95-100	70-100	55-90	36-50	4-18
	16-99	Sandy clay loam, loam, sandy loam, clay loam.	SM, CL-ML, SM-SC, ML	A-4	0	96-100	95-100	60-80	36-70	<35	NP-7

See footnote at end of table.

TABLE 13.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
CeB---------- Conetoe	0-25	Loamy sand------	SM, SP-SM	A-2, A-3	0	100	100	50-90	5-30	---	NP
	25-41	Sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4	0	100	100	50-80	20-40	15-30	NP-10
	41-90	Loamy sand, sand	SM, SP, SP-SM	A-2, A-3	0	100	100	40-85	4-30	---	NP
Cn---------- Congaree	0-7	Silt loam-------	CL-ML, ML, CL	A-4	0	95-100	95-100	70-100	51-90	20-35	3-10
	7-42	Silty clay loam, fine sandy loam, loam.	SM, SC, ML, CL	A-4, A-6, A-7	0	95-100	95-100	70-100	40-90	25-50	4-22
	42-93	Variable--------	---	---	---	---	---	---	---	---	---
Co---------- Coxville	0-7	Sandy loam------	SM, ML, CL-ML, CL	A-4, A-6, A-7	0	100	100	85-97	46-75	20-46	1-15
	7-85	Clay loam, sandy clay, clay, sandy clay loam.	CL, CH	A-6, A-7	0	100	100	85-98	53-80	30-55	12-35
DgA---------- Dogue	0-7	Fine sandy loam	SM, SC, SM-SC	A-2, A-4	0	95-100	75-100	50-85	20-50	<25	NP-8
	7-55	Clay loam, clay, sandy clay loam.	CL, CH, SC	A-6, A-7	0	95-100	75-100	65-95	40-90	35-60	16-32
	55-80	Stratified sand to sandy clay loam.	SM, SC, SP-SM, SM-SC	A-2, A-4, A-1	0	80-100	60-100	35-70	10-40	<26	NP-8
DpA, DpB---------- Duplin	0-5	Sandy loam------	SM, ML, SM-SC	A-2, A-4	0	100	100	67-98	24-58	<16	NP-7
	5-90	Sandy clay, clay loam, clay.	CL, CH	A-6, A-7	0	100	98-100	80-100	50-82	24-54	13-39
DuB*: Duplin----------	0-5	Sandy loam------	SM, ML, SM-SC	A-2, A-4	0	100	100	67-98	24-58	<16	NP-7
	5-90	Sandy clay, clay loam, clay.	CL, CH	A-6, A-7	0	100	98-100	80-100	50-82	24-54	13-39
Urban land.											
ExA---------- Exum	0-14	Very fine sandy loam.	ML, CL-ML, CL	A-4	0	100	95-100	80-100	51-80	<25	NP-10
	14-91	Loam, clay loam, silty clay loam.	CL	A-4, A-6, A-7	0	100	95-100	90-100	60-90	22-49	8-30
Fo---------- Foreston	0-11	Loamy sand------	SM	A-2	0	100	100	60-100	15-30	---	NP
	11-58	Sandy loam, loamy sand.	SM	A-2	0	100	100	70-100	18-35	<25	NP-4
	58-72	Loamy fine sand, loamy sand, fine sand.	SP-SM, SM	A-2	0	100	100	50-98	6-25	---	NP
GoA---------- Goldsboro	0-15	Fine sandy loam	SM, SM-SC, SC	A-2, A-4	0	90-100	85-100	50-95	15-45	<25	NP-14
	15-82	Sandy clay loam, sandy loam.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6	0	98-100	95-100	60-95	25-55	16-35	4-16

See footnote at end of table.

TABLE 13.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
GpA*:											
Goldsboro	0-15	Fine sandy loam	SM, SM-SC, SC	A-2, A-4	0	90-100	85-100	50-95	15-45	<25	NP-14
	15-82	Sandy clay loam, sandy loam.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6	0	98-100	95-100	60-95	25-55	16-35	4-16
Urban land.											
Gr	0-11	Very fine sandy loam.	ML, CL-ML	A-4	0	100	100	85-100	55-80	<30	NP-7
Grantham	11-99	Loam, clay loam	CL, CL-ML	A-4, A-6, A-7	0	100	100	90-100	60-85	22-49	8-30
Gt*:											
Grantham	0-11	Very fine sandy loam.	ML, CL-ML	A-4	0	100	100	85-100	55-80	<30	NP-7
	11-99	Loam, clay loam	CL, CL-ML	A-4, A-6, A-7	0	100	100	90-100	60-85	22-49	8-30
Urban land.											
GyC, GyD	0-5	Fine sandy loam	SM	A-2-4	0	100	95-100	75-99	18-28	---	NP
Gritney	5-50	Sandy clay, clay	CH, CL, SC	A-7	0	100	95-100	80-100	45-65	44-60	22-35
	50-60	Sandy clay loam	CH, CL, SC	A-7	0	100	95-100	80-100	40-55	40-55	20-35
Jo	0-13	Fine sandy loam	SM, SM-SC	A-2, A-4	---	100	95-100	60-90	15-45	<20	NP-7
Johns	13-34	Sandy clay loam, sandy loam.	SC, SM-SC, CL	A-2, A-4, A-6	---	100	95-100	60-90	30-55	20-35	4-15
	34-70	Sand, loamy sand, loamy coarse sand.	SM, SP-SM, SP	A-2, A-3	---	95-100	95-100	51-90	4-25	---	NP
JS*	0-29	Mucky loam	OL	A-8	0	100	100	90-100	60-75	---	NP
Johnston	29-40	Stratified fine sandy loam to sandy loam.	SM, SM-SC	A-2, A-4	0	100	100	50-85	25-50	<35	NP-10
	40-60	Stratified loamy sand to sand.	SM, SP-SM	A-2, A-3	0	100	100	50-75	5-30	---	NP
KeB	0-25	Loamy sand	SM	A-1, A-2	0	100	95-100	45-60	10-25	<25	NP-3
Kenansville	25-36	Sandy loam, fine sandy loam.	SM, SC, SM-SC	A-2	0	100	95-100	50-65	20-35	<30	NP-10
	36-90	Sand, loamy sand	SP-SM, SM	A-1, A-2, A-3	0	100	95-100	40-60	5-30	---	NP
Lu	0-12	Fine sandy loam	SM, SM-SC	A-2, A-4	0	100	85-100	65-90	15-45	<20	NP-7
Lumbee	12-33	Sandy clay loam, sandy loam.	SC, SM-SC	A-2, A-4, A-6	0	100	90-100	65-95	30-49	19-35	4-15
	33-60	Loamy sand, sand, fine sand, coarse sand.	SP, SM, SP-SM	A-2, A-3	0	90-100	85-100	50-90	4-25	---	NP
Ly	0-7	Fine sandy loam	SM, SM-SC	A-2, A-4	0	100	100	75-100	25-50	<30	NP-7
Lynchburg	7-76	Sandy clay loam, sandy loam, clay loam.	SM-SC, SC, CL, CL-ML	A-2, A-4, A-6	0	100	100	70-100	25-60	15-40	4-18
	76-85	Sandy clay loam, sandy loam, clay loam.	SM-SC, SC, CL, CL-ML	A-2, A-4, A-6	0	100	100	60-100	25-55	<35	NP-15

See footnote at end of table.

TABLE 13.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
MaA, MaB---------- Marlboro	0-10	Sandy loam------	SM, SM-SC, ML, CL-ML	A-2, A-4	0	98-100	95-100	75-100	25-60	<35	NP-7
	10-71	Sandy clay, clay loam, clay, sandy clay loam.	CL, ML	A-4, A-6, A-7	0	98-100	95-100	78-100	51-70	25-48	8-20
Me---------- Meggett	0-5	Loam----------	CL, CL-ML, ML	A-4	0	100	100	90-100	51-65	<30	NP-10
	5-64	Sandy clay, clay, clay loam.	CH, SC, CL, MH	A-7	0	100	100	90-100	45-80	45-70	25-45
	64-70	Sandy clay, sandy clay loam.	GC, SC	A-2-6, A-2-4, A-6	0	40-80	35-75	30-70	20-60	0-40	20-50
Na---------- Nahunta	0-12	Very fine sandy loam.	ML, CL-ML, CL	A-4	0	100	95-100	80-100	51-80	<25	NP-10
	12-99	Loam, clay loam, silty clay loam.	CL	A-4, A-6, A-7	0	100	95-100	90-100	60-90	22-49	8-30
NoA, NoB, NoC------ Norfolk	0-12	Loamy sand------	SM, SM-SC, SC	A-2	0	95-100	95-100	50-91	15-33	<25	NP-14
	12-90	Sandy loam, sandy clay loam, clay loam, coarse sandy loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	0	95-100	91-100	70-96	30-55	20-40	4-20
NuB*: Norfolk----------	0-12	Loamy sand------	SM, SM-SC, SC	A-2	0	95-100	95-100	50-91	15-33	<25	NP-14
	12-90	Sandy loam, sandy clay loam, clay loam, coarse sandy loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	0	95-100	91-100	70-96	30-55	20-40	4-20
Urban land.											
Pa---------- Pactolus	0-47	Loamy sand------	SM	A-2	0	100	90-100	51-95	13-30	---	NP
	47-85	Sand, loamy sand, loamy fine sand.	SP-SM, SM	A-2, A-3	0	100	90-100	51-95	5-30	---	NP
Pt*. Pits											
Pu---------- Portsmouth	0-16	Fine sandy loam	ML, CL	A-4	0	100	100	85-100	60-90	18-28	NP-8
	16-40	Sandy clay loam, loam, sandy loam.	SM, SC, ML, CL	A-4, A-6	0	100	100	80-95	40-75	20-36	2-12
	40-82	Loamy sand, sandy loam, clay loam.	SP, SM, ML, CL	A-2, A-3, A-4, A-6	0	100	100	50-90	5-55	12-36	NP-14

See footnote at end of table.

TABLE 13.--ENGINEERING PROPERTIES AND CLASSIFICATIONS--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
Ra Rains	0-13	Fine sandy loam	SM, SM-SC, ML	A-2, A-4	0	100	95-100	50-85	25-56	<35	NP-10
	13-75	Sandy clay loam, clay loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	0	100	98-100	65-98	30-70	18-40	4-18
	75-99	Sandy clay loam, clay loam, sandy clay.	SC, SM-SC, CL, CL-ML	A-4, A-6, A-7	0	100	98-100	65-98	36-72	18-45	4-22
Ro Roanoke	0-8	Loam, fine sandy loam.	ML, CL-ML, CL, SM	A-6, A-4	0	95-100	85-100	60-100	35-90	25-40	5-16
	8-52	Clay loam, clay, sandy clay loam.	CH, MH, CL	A-7	0	90-100	85-100	85-100	65-95	45-60	22-36
	52-90	Variable	---	---	---	---	---	---	---	---	---
StB State	0-13	Loamy sand	SM	A-2	0	95-100	85-100	45-95	15-30	<20	NP
	13-40	Loam, clay loam, sandy clay loam, sandy loam.	CL, SC, SM, ML	A-2, A-4, A-6	0	95-100	85-100	70-95	30-75	24-34	8-16
	40-99	Variable	---	---	---	---	---	---	---	---	---
TaB Tarboro	0-40	Loamy sand	SM, SP-SM	A-2, A-3	0	100	100	65-95	5-25	---	NP
	40-99	Sand, coarse sand.	SP, SP-SM	A-2, A-3	0	100	90-100	55-90	3-12	---	NP
Ur*. Urban land											
WaB, WaC, WaD Wagram	0-29	Loamy sand	SM	A-2	0	100	98-100	50-85	15-35	---	NP
	29-94	Sandy clay loam, sandy loam.	SC	A-2, A-4, A-6	0	100	98-100	80-95	31-49	21-40	8-25
We Wahee	0-9	Fine sandy loam	SM, SM-SC	A-2, A-4	0	100	95-100	50-85	30-50	<28	NP-7
	9-63	Clay, clay loam, silty clay.	CL, CH	A-7	0	100	100	95-100	70-90	41-60	18-32
	63-75	Variable	---	---	---	---	---	---	---	---	---
Wh Wehadkee	0-6	Silt loam	CL, MH, ML	A-6, A-7	0	100	98-100	85-100	51-95	20-58	11-22
	6-84	Loam, sandy clay loam, clay loam.	ML, CL	A-6, A-7	0	100	99-100	90-100	51-85	30-45	11-20
WkB Wickham	0-15	Sandy loam	SM, SM-SC, ML, CL-ML	A-4	0	95-100	90-100	70-100	45-80	<25	NP-7
	15-38	Sandy clay loam, clay loam, loam.	CL-ML, CL, SC, SM-SC	A-2, A-4, A-6, A-7-6	0	95-100	90-100	75-100	30-70	20-41	5-15
	38-99	Variable	---	---	---	---	---	---	---	---	---

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS

[The symbol > means more than. Entries under "Erosion factors--T" apply to the entire profile. Absence of an entry indicates that data were not available or were not estimated]

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Risk of corrosion		Erosion factors	
						Uncoated steel	Concrete	K	T
	In	In/hr	In/in	pH					
AaA	0-9	2.0-6.0	0.12-0.20	4.5-6.0	Low	Moderate	Moderate	0.20	4
Altavista	9-40	0.6-2.0	0.12-0.20	4.5-6.0	Low	Moderate	Moderate	0.24	
	40-80	---	---	---				---	
AuB	0-26	>6.0	0.04-0.09	4.5-6.5	Low	Low	High	0.10	5
Autryville	26-38	2.0-6.0	0.08-0.13	4.5-5.5	Low	Low	High	0.10	
	38-54	>6.0	0.03-0.08	4.5-5.5	Low	Low	High	0.10	
	54-84	0.6-2.0	0.10-0.15	4.5-5.5	Low	Low	High	0.17	
AyA, AyB	0-11	2.0-6.0	0.15-0.20	4.5-6.0	Low	Low	High	0.37	4
Aycock	11-90	0.6-2.0	0.15-0.20	4.5-5.5	Low	Moderate	High	0.43	
Ba	0-35	2.0-6.0	0.10-0.20	4.5-5.5	Low	High	High	0.10	---
Ballahack	35-74	0.6-20	0.06-0.18	4.5-5.5	Low	High	High	0.17	
BB*	0-38	0.6-2.0	0.12-0.18	4.5-5.5	Low	High	Moderate	0.20	5
Bibb	38-66	0.6-2.0	0.12-0.20	4.5-5.5	Low	High	Moderate	0.37	
BnB	0-47	6.0-20	0.03-0.07	4.5-6.0	Very low	Low	High	0.17	5
Blanton	47-61	2.0-6.0	0.10-0.15	4.5-5.5	Low	Moderate	High	0.24	
	61-83	0.6-2.0	0.10-0.15	4.5-5.5	Low	High	High	0.32	
Ca	0-15	0.6-6.0	0.15-0.22	4.5-6.5	Low	High	High	0.15	5
Cape Fear	15-65	0.06-0.2	0.12-0.22	4.5-6.0	Moderate	High	High	0.32	
	65-80	---	---	---				---	
Cc	0-16	0.6-2.0	0.15-0.24	4.5-6.5	Low	High	Moderate	0.28	4
Chewacla	16-99	0.6-2.0	0.12-0.20	4.5-6.5	Low	High	Moderate	0.28	
CeB	0-25	6.0-20	0.05-0.10	4.5-6.0	Low	Low	High	0.15	5
Conetoe	25-41	2.0-6.0	0.10-0.15	4.5-6.0	Low	Low	High	0.10	
	41-90	6.0-20	0.05-0.10	4.5-6.0	Low	Low	High	0.10	
Cn	0-7	0.6-2.0	0.12-0.20	4.5-7.3	Low	Moderate	Moderate	0.37	5
Congaree	7-42	0.6-2.0	0.12-0.20	4.5-7.3	Low	Moderate	Moderate	0.37	
	42-93	---	---	---				---	
Co	0-7	0.6-2.0	0.12-0.17	4.5-6.0	Low	High	High	0.28	---
Coxville	7-85	0.2-0.6	0.14-0.18	4.5-5.5	Moderate	High	High	0.32	
DgA	0-7	2.0-6.0	0.08-0.15	3.6-6.5	Low	High	High	0.32	4
Dogue	7-55	0.2-0.6	0.12-0.19	3.6-5.5	Moderate	High	High	0.28	
	55-80	0.6-6.0	0.05-0.14	3.6-5.5	Low	High	High	0.17	
DpA, DpB	0-5	2.0-6.0	0.10-0.15	5.1-7.3	Low	Moderate	High	0.32	3
Duplin	5-90	0.2-0.6	0.13-0.18	4.5-5.5	Moderate	High	High	0.28	
DuB*:									
Duplin	0-5	2.0-6.0	0.10-0.15	5.1-7.3	Low	Moderate	High	0.32	3
	5-90	0.2-0.6	0.13-0.18	4.5-5.5	Moderate	High	High	0.28	
Urban land.									
ExA	0-14	2.0-6.0	0.15-0.20	4.5-6.0	Low	Low	High	0.37	5
Exum	14-91	0.6-2.0	0.15-0.20	4.5-5.5	Low	Moderate	High	0.37	
Fo	0-11	6.0-20	0.05-0.10	4.5-6.5	Very low	Moderate	High	0.10	4
Foreston	11-58	2.0-6.0	0.09-0.13	4.5-5.5	Low	Moderate	High	0.10	
	58-72	6.0-20	0.03-0.10	4.5-5.5	Very low	Moderate	High	0.10	
GoA	0-15	2.0-6.0	0.08-0.12	4.5-6.0	Low	Moderate	High	0.20	5
Goldsboro	15-82	0.6-2.0	0.11-0.15	4.5-5.5	Low	Moderate	High	0.24	

See footnote at end of table.

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Risk of corrosion		Erosion factors	
						Uncoated steel	Concrete	K	T
	In	In/hr	In/in	pH					
GpA*:									
Goldsboro	0-15	2.0-6.0	0.08-0.12	4.5-6.0	Low	Moderate	High	0.20	5
	15-82	0.6-2.0	0.11-0.15	4.5-5.5	Low	Moderate	High	0.24	
Urban land.									
Gr	0-11	2.0-6.0	0.13-0.20	4.5-5.5	Low	High	High	0.37	4
Grantham	11-99	0.2-0.6	0.15-0.20	4.5-5.5	Low	High	High	0.43	
Gt*:									
Grantham	0-11	2.0-6.0	0.13-0.20	4.5-5.5	Low	High	High	0.37	4
	11-99	0.2-0.6	0.15-0.20	4.5-5.5	Low	High	High	0.43	
Urban land.									
GyC, GyD	0-5	6.0-20	0.10-0.15	4.5-5.5	Low	High	Moderate	0.32	3
Gritney	5-50	0.06-0.2	0.10-0.15	4.5-5.5	High	High	Moderate	0.37	
	50-60	0.2-0.6	0.10-0.15	4.5-5.5	High	High	Moderate	0.37	
Jo	0-13	2.0-6.0	0.08-0.14	4.5-5.5	Low	Moderate	High	0.20	5
Johns	13-34	0.6-2.0	0.12-0.15	4.5-5.5	Low	Moderate	High	0.24	
	34-70	6.0-20	0.03-0.06	4.5-5.5	Low	Moderate	High	0.10	
JS*	0-29	2.0-6.0	0.20-0.26	4.5-5.5	Low	High	High	0.17	---
Johnston	29-40	6.0-20	0.06-0.12	4.5-5.5	Low	High	High	0.17	
	40-60	6.0-20	0.02-0.07	4.5-5.5	Low	High	High	0.17	
KeB	0-25	6.0-20	0.04-0.10	4.5-6.0	Low	Low	High	0.15	5
Kenansville	25-36	2.0-6.0	0.10-0.14	4.5-6.0	Low	Low	High	0.15	
	36-90	6.0-20	<0.05	4.5-6.0	Low	Low	High	0.10	
Lu	0-12	2.0-6.0	0.08-0.12	4.5-5.5	Low	High	High	0.24	5
Lumbee	12-33	0.6-2.0	0.12-0.16	4.5-5.5	Low	High	High	0.32	
	33-60	6.0-20	0.03-0.06	4.5-5.5	Low	High	High	0.10	
Ly	0-7	2.0-6.0	0.09-0.13	3.6-5.5	Low	High	High	0.20	4
Lynchburg	7-76	0.6-2.0	0.12-0.16	3.6-5.5	Low	High	High	0.20	
	76-85	0.6-2.0	0.12-0.16	3.6-5.5	Low	High	High	0.20	
MaA, MaB	0-10	2.0-6.0	0.09-0.14	4.5-6.0	Low	High	Moderate	0.20	4
Marlboro	10-71	0.6-2.0	0.14-0.18	4.5-6.5	Low	High	Moderate	0.20	
Me	0-5	2.0-6.0	0.15-0.20	5.6-7.3	Low	High	Low	0.32	4
Meggett	5-64	0.06-0.2	0.13-0.18	5.6-8.4	High	High	Low	0.32	
	64-70	0.2-2.0	0.12-0.16	6.6-8.4	Moderate	High	Low	0.28	
Na	0-12	2.0-6.0	0.15-0.20	4.5-6.0	Low	Moderate	Moderate	0.43	4
Nahunta	12-99	0.6-2.0	0.15-0.20	3.6-5.5	Low	High	High	0.43	
NoA, NoB, NoC	0-12	2.0-6.0	0.06-0.10	4.5-6.0	Low	Moderate	High	0.17	5
Norfolk	12-90	0.6-2.0	0.10-0.15	4.5-5.5	Low	Moderate	High	0.24	
NuB*:									
Norfolk	0-12	2.0-6.0	0.06-0.10	4.5-6.0	Low	Moderate	High	0.17	5
	12-90	0.6-2.0	0.10-0.15	4.5-5.5	Low	Moderate	High	0.24	
Urban land.									
Pa	0-47	6.0-20.	0.05-0.10	4.5-6.0	Low	Low	High	0.10	---
Pactolus	47-85	6.0-20.	0.03-0.07	4.5-5.5	Low	Low	High	0.10	
Pt*.									
Pits									
Pu	0-16	0.6-2.0	0.14-0.20	4.5-5.5	Low	High	High	---	---
Portsmouth	16-40	0.6-2.0	0.13-0.17	4.5-5.5	Low	High	High	---	
	40-82	0.6-6.0	0.04-0.16	4.5-5.5	Low	High	High	---	

See footnote at end of table.

TABLE 14.--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Soil name and map symbol	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Risk of corrosion		Erosion factors	
						Uncoated steel	Concrete	K	T
	In	In/hr	In/in	pH					
Ra	0-13	2.0-6.0	0.08-0.12	4.5-6.5	Low	High	High	0.17	5
Rains	13-75	0.6-2.0	0.10-0.15	4.5-5.5	Low	High	High	0.24	
	75-99	0.6-2.0	0.10-0.15	4.5-5.5	Low	High	High	0.28	
Ro	0-8	0.6-2.0	0.14-0.20	4.5-5.5	Low	High	High	---	---
Roanoke	8-52	0.06-0.2	0.10-0.19	4.5-5.5	Moderate	High	High	---	
	52-90	---	---	---	---	---	---	---	
StB	0-13	2.0-6.0	0.06-0.09	4.5-6.0	Low	Low	High	0.28	4
State	13-40	0.6-6.0	0.14-0.19	4.5-5.5	Low	Moderate	High	0.28	
	40-99	---	---	---	---	---	---	---	
TaB	0-40	6.0-20	0.05-0.09	5.1-6.5	Low	Low	Moderate	0.10	5
Tarboro	40-99	>20	0.02-0.06	5.1-6.5	Low	Low	Moderate	0.10	
Ur*.									
Urban land									
WaB, WaC, WaD	0-29	6.0-20	0.05-0.08	4.5-6.0	Low	Low	High	0.15	5
Wagram	29-94	2.0-6.0	0.12-0.16	4.5-5.5	Low	Low	High	0.20	
We	0-9	0.6-2.0	0.10-0.15	4.5-5.5	Low	Moderate	High	0.28	5
Wahee	9-63	0.06-0.2	0.12-0.20	4.5-5.5	Moderate	High	High	0.28	
	63-75	0.2-0.6	0.12-0.20	4.5-5.5	Moderate	High	High	0.28	
Wh	0-6	2.0-6.0	0.14-0.18	4.5-6.5	Low	High	Moderate	0.24	---
Wehadkee	6-84	0.6-2.0	0.16-0.20	4.5-6.5	Low	High	Moderate	0.32	
WkB	0-15	2.0-6.0	0.11-0.16	4.5-6.0	Low	Moderate	High	0.20	5
Wickham	15-38	0.6-2.0	0.12-0.17	4.5-6.0	Low	Moderate	High	0.24	
	38-99	---	---	---	---	---	---	---	

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--SOIL AND WATER FEATURES

[The definitions of "flooding" and "water table" in the Glossary explain terms such as "rare," "brief," "apparent," and "perched." The symbol > means more than. Absence of an entry indicates that the feature is not a concern]

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
AaA--- Altavista	C	None	---	---	1.5-2.5	Apparent	Dec-Mar
AuB--- Autryville	A	None	---	---	>6.0	---	---
AyA, AyB--- Aycock	B	None	---	---	>6.0	---	---
Ba--- Ballahack	D	Frequent	Brief	Nov-Mar	0-1.0	Apparent	Nov-Mar
BB*--- Bibb	C	Common	Brief	Dec-May	0.5-1.5	Apparent	Dec-Apr
BnB--- Blanton	A	None	---	---	>6.0	---	---
Ca**--- Cape Fear	D	Frequent	Brief	Jan-May	+0.5-1.5	Apparent	Nov-Apr
Cc--- Chewacla	C	Common	Brief	Nov-Apr	0.5-1.5	Apparent	Nov-Apr
CeB--- Conetoe	A	None	---	---	>6.0	---	---
Cn--- Congaree	B	Frequent	Brief	Nov-Apr	2.5-4.0	Apparent	Nov-Apr
Co--- Coxville	D	None	---	---	0-2.5	Apparent	Nov-Apr
DgA--- Dogue	C	None	---	---	2.0-3.0	Apparent	Dec-Apr
DpA, DpB--- Duplin	C	None	---	---	2.0-3.5	Apparent	Dec-Apr
DuB*: Duplin---	C	None	---	---	2.0-3.5	Apparent	Dec-Apr
Urban land.							
ExA--- Exum	C	None	---	---	2.0-3.0	Apparent	Nov-Apr
Fo--- Foreston	C	None	---	---	2.0-3.0	Apparent	Dec-Apr
GoA--- Goldsboro	B	None	---	---	2.0-3.0	Apparent	Dec-Mar
GpA*: Goldsboro---	B	None	---	---	2.0-3.0	Apparent	Dec-Mar
Urban land.							
Gr--- Grantham	D	None	---	---	0-1.0	Apparent	Dec-Mar
Gt*: Grantham---	D	None	---	---	0-1.0	Apparent	Dec-Mar

See footnotes at end of table.

TABLE 15.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
Gt*: Urban land.							
GyC, GyD---------- Gritney	C	None----------	---	---	>6.0	---	---
Jo---------- Johns	C	None----------	---	---	1.5-3.0	Apparent	Nov-Apr
JS**---------- Johnston	D	Frequent------	Long----------	Nov-Jul	+1-1.5	Apparent	Nov-Jun
KeB---------- Kenansville	A	None----------	---	---	>6.0	---	---
Lu---------- Lumbee	D	Rare----------	---	---	0-1.0	Apparent	Nov-Apr
Ly---------- Lynchburg	B/D	None----------	---	---	0.5-1.5	Apparent	Nov-Apr
MaA, MaB---------- Marlboro	B	None----------	---	---	>6.0	---	---
Me---------- Meggett	D	Common--------	Brief----------	Dec-Apr	0-1.0	Apparent	Jun-Apr
Na---------- Nahunta	C	None----------	---	---	1.0-2.0	Apparent	Nov-Apr
NoA, NoB, NoC----- Norfolk	B	None----------	---	---	4.0-6.0	---	---
NuB*: Norfolk----------	B	None----------	---	---	4.0-6.0	---	---
Urban land.							
Pa---------- Pactolus	C	None----------	---	---	1.5-2.5	Apparent	Jan-Mar
Pt*. Pits							
Pu---------- Portsmouth	D	None----------	---	---	0-1.0	Apparent	Jan-Dec
Ra---------- Rains	B/D	None----------	---	---	0-1.0	Apparent	Nov-Apr
Ro---------- Roanoke	D	Frequent------	Brief----------	Nov-Jun	0-1.0	Apparent	Nov-May
StB---------- State	B	None to rare	Brief----------	Dec-Jun	>6.0	---	---
TaB---------- Tarboro	A	None to rare	Brief----------	---	>6.0	---	---
Ur*. Urban land							
WaB, WaC, WaD----- Wagram	A	None----------	---	---	>6.0	---	---
We---------- Wahee	D	Common--------	Brief----------	---	0.5-1.5	Apparent	Dec-Mar

See footnotes at end of table.

TABLE 15.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Depth	Kind	Months
					Ft		
Wh---------- Wehadkee	D	Common---------	Brief----------	Nov-Jun	0-2.5	Apparent	Nov-Jun
WkB---------- Wickham	B	None----------	---	---	>6.0	---	---

* See description of the map unit for composition and behavior characteristics of the map unit.

** A plus sign under "Depth to high water table" indicates that the water table is above the surface of the soil.

TABLE 16.--ENGINEERING TEST DATA

[Tests were performed by the Materials and Test Unit, North Carolina Division of Highways. The location of tested pedons is given in the descriptions of the soils in the section "Soil series and morphology"]

Soil name and report number	Depth	Horizon	Moisture density[1]		Mechanical analysis[2]									Liquid limit	Plasticity index	Classification	
					Percentage passing sieve--					Percentage smaller than--							
			Maximum dry density	Optimum moisture	No. 4 (4.7 mm)	No. 10 (2.0 mm)	No. 40 (0.42 mm)	No. 60 (0.25 mm)	No. 200 (0.074 mm)	0.05 mm	0.02 mm	0.005 mm	0.002 mm			AASHTO[3]	Unified[4]
	In		Pcf	Pct													
Ballahack fine sandy loam:																	
S72NC-33-10-1	0-9	Ap	109	15	100	100	93	87	47	39	27	17	12	25	7	A-4(2)	SM-SC
S72NC-33-10-3	17-35	A13	102	19	100	100	97	91	59	50	41	31	25	31	10	A-4(5)	CL
S72NC-33-10-6	58-74	C3g	117	11	100	99	75	53	23	15	10	6	5	--	NP	A-2-4(0)	SM
Cape fear loam:																	
S71NC-33-4-1	0-15	A1	88	24	100	99	85	75	61	58	43	26	17	47	11	A-7-5(7)	ML
S71NC-33-4-3	18-33	B21tg	101	21	100	99	84	77	65	63	58	48	44	50	25	A-7-6(14)	CL
S71NC-33-4-6	65-120	IIC	115	13	100	94	36	22	8	7	6	5	4	--	NP	A-1-b(0)	SP-SM
Conetoe loamy sand:																	
S70NC-33-5-1	0-8	Ap	115	10	100	100	70	35	14	13	11	6	4	--	NP	A-2-4(0)	SM
S70NC-33-5-4	28-41	B2t	121	12	100	100	74	42	28	27	26	22	19	26	8	A-2-4(0)	SC
S70NC-33-5-7	57-90	C2	102	16	100	100	83	33	4	4	4	3	2	--	NP	A-3(0)	SP
Roanoke loam:																	
S72NC-33-8-1	0-8	Ap	107	16	100	100	87	79	60	50	35	16	10	29	5	A-4(5)	ML
S72NC-33-8-3	11-42	B2tg	94	25	100	100	96	94	90	87	80	64	52	57	29	A-7-6(19)	CH
S72NC-33-8-5	52-90	IICg	110	16	100	90	29	13	3	2	2	2	2	--	NP	A-1-b(0)	SP
State loamy sand:																	
S70NC-33-2-1	0-8	Ap	116	10	100	100	91	73	23	18	13	8	6	--	NP	A-2-4(0)	SM
S70NC-33-2-4	16-32	B2t	114	15	100	100	95	88	46	41	36	30	26	32	13	A-6(3)	SC
S70NC-33-2-6	40-62	IIC1	101	17	100	100	88	54	6	6	6	5	4	--	NP	A-3(0)	SP-SM
Tarboro loamy sand:																	
S70NC-33-3-1	0-8	Ap	112	12	100	100	80	47	14	11	8	5	3	--	NP	A-2-4(0)	SM
S70NC-33-3-2	8-26	C1	109	14	100	100	85	50	13	9	8	5	4	--	NP	A-2-4(0)	SM
S70NC-33-3-5	57-82	C4	100	18	100	99	82	56	3	3	2	1	1	--	NP	A-3(0)	SP

[1]Based on the moisture-density relations of soils using 5.5-lb. rammer and 12-in. drop, AASHTO Designation T 99, Methods A and C (1).

[2]Mechanical analyses according to the AASHTO Designation T 88. Results by this procedure frequently may differ somewhat from results that would have been obtained by the soil survey procedure of the Soil Conservation Service (SCS). In the AASHTO procedure, the fine material is analyzed by the hydrometer method and the various grain-sized fractions are calculated on the basis of all the material, including that coarser than 2 millimeters in diameter. In the SCS soil survey procedure, the fine material is analyzed by the pipette method and the material coarser than 2 millimeters in diameter is excluded from calculations of grain-sized fractions. The mechanical analyses used in this table are not suitable for use in naming textural classes for soil.

[3]Based on Standard Specifications for Highway Materials and Methods of Sampling and Testing (Pt. 1, Ed. 10): The Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes, AASHTO Designation M 145-49.

[4]Based on the Unified Soil Classification System (2).

TABLE 17.--CLASSIFICATION OF THE SOILS

[An asterisk in the first column indicates that the soil is a taxadjunct to the series. See text for a description of those characteristics of the soil that are outside the range of the series]

Soil name	Family or higher taxonomic class
Altavista	Fine-loamy, mixed, thermic Aquic Hapludults
Autryville	Loamy, siliceous, thermic Arenic Paleudults
Aycock	Fine-silty, siliceous, thermic Typic Paleudults
Ballahack	Fine-loamy, mixed, acid, thermic Cumulic Humaquepts
Bibb	Coarse-loamy, siliceous, acid, thermic Typic Fluvaquents
Blanton	Loamy, siliceous, thermic Grossarenic Paleudults
Cape Fear	Clayey, mixed, thermic Typic Umbraquults
*Chewacla	Fine-loamy, mixed, thermic Fluvaquentic Dystrochrepts
Conetoe	Loamy, mixed, thermic Arenic Hapludults
*Congaree	Fine-loamy, mixed, nonacid, thermic Typic Udifluvents
Coxville	Clayey, kaolinitic, thermic Typic Paleaquults
Dogue	Clayey, mixed, thermic Aquic Hapludults
Duplin	Clayey, kaolinitic, thermic Aquic Paleudults
Exum	Fine-silty, siliceous, thermic Aquic Paleudults
Foreston	Coarse-loamy, siliceous, thermic Aquic Paleudults
Goldsboro	Fine-loamy, siliceous, thermic Aquic Paleudults
Grantham	Fine-silty, siliceous, thermic Typic Paleaquults
Gritney	Clayey, mixed, thermic Typic Hapludults
Johns	Fine-loamy over sandy or sandy-skeletal, siliceous, thermic Aquic Hapludults
Johnston	Coarse-loamy, siliceous, acid, thermic Cumulic Humaquepts
Kenansville	Loamy, siliceous, thermic Arenic Hapludults
Lumbee	Fine-loamy over sandy or sandy-skeletal, siliceous, thermic Typic Ochraquults
Lynchburg	Fine-loamy, siliceous, thermic Aeric Paleaquults
Marlboro	Clayey, kaolinitic, thermic Typic Paleudults
*Meggett	Fine, mixed, thermic Typic Albaqualfs
Nahunta	Fine-silty, siliceous, thermic Aeric Paleaquults
Norfolk	Fine-loamy, siliceous, thermic Typic Paleudults
Pactolus	Thermic, coated Aquic Quartzipsamments
Portsmouth	Fine-loamy, mixed, thermic Typic Umbraquults
Rains	Fine-loamy, siliceous, thermic Typic Paleaquults
Roanoke	Clayey, mixed, thermic Typic Ochraquults
State	Fine-loamy, mixed, thermic Typic Hapludults
Tarboro	Mixed, thermic Typic Udipsamments
Wagram	Loamy, siliceous, thermic Arenic Paleudults
Wahee	Clayey, mixed, thermic Aeric Ochraquults
*Wehadkee	Fine-loamy, mixed, nonacid, thermic Typic Fluvaquents
Wickham	Fine-loamy, mixed, thermic Typic Hapludults

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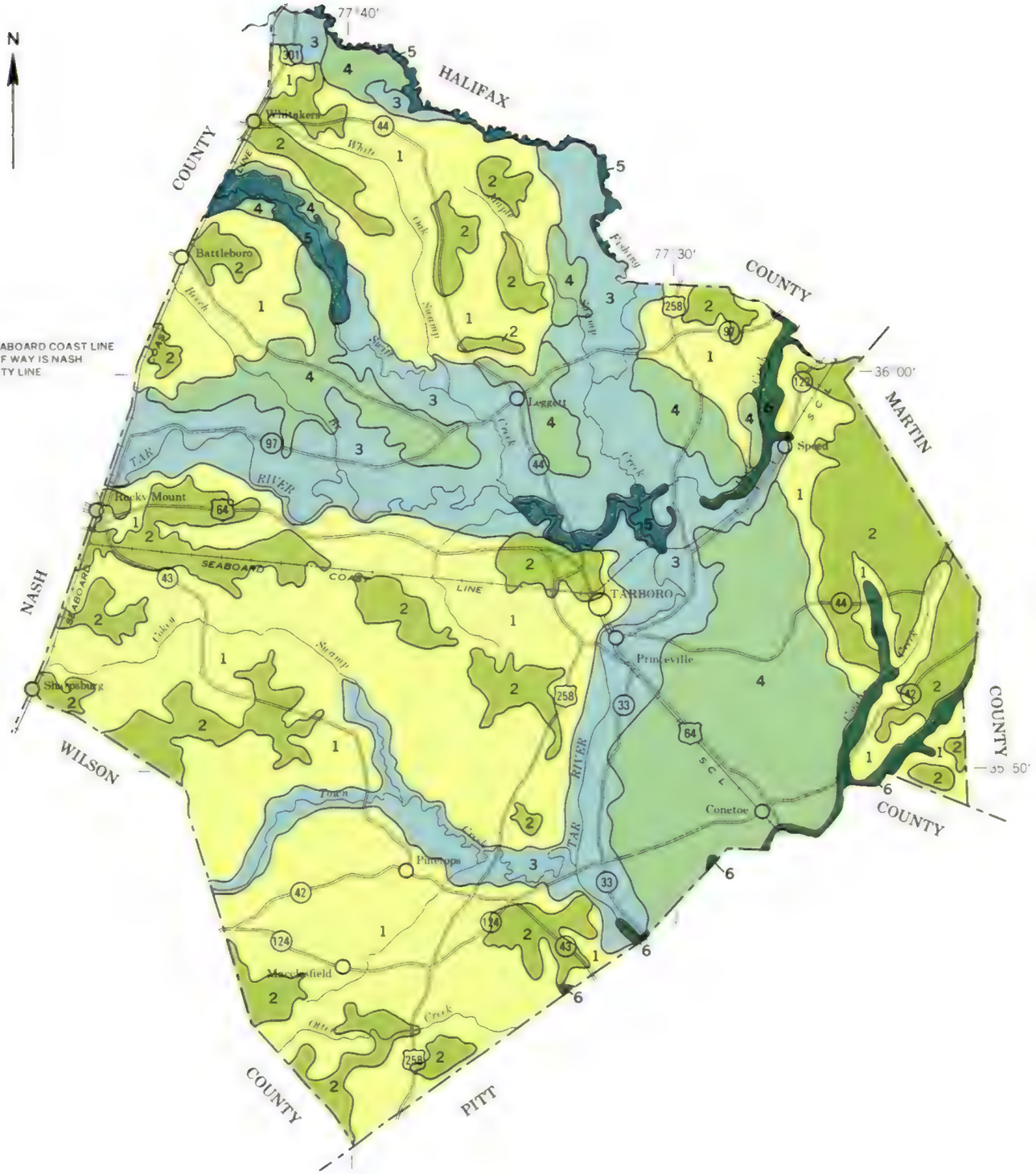


LEGEND

1 NORFOLK-AYCOCK-WAGRAM association: Nearly level to strongly sloping, well drained soils that have a loamy subsoil; on uplands

2 GOLDSBORO-RAINS association: Nearly level, moderately well drained and poorly drained soils that have a loamy subsoil; on uplands

3 TARBORO-ALTAVISTA-WICKHAM association: Nearly level and gently sloping, somewhat excessively drained to moderately well drained soils that have a loamy subsoil or sandy underlying material; on stream terraces

4 ROANOKE - CONETOE-PORTSMOUTH association: Nearly level and gently sloping, very poorly drained, poorly drained, and well drained soils that have a clayey to sandy subsoil; on stream terraces

5 WEHADKEE-CONGAREE association: Nearly level, well drained and poorly drained soils that have loamy and sandy underlying material; on flood plains

6 BIBB-JOHNSTON association: Nearly level, poorly drained and very poorly drained soils that have loamy and sandy underlying material; on flood plains

Compiled 1978

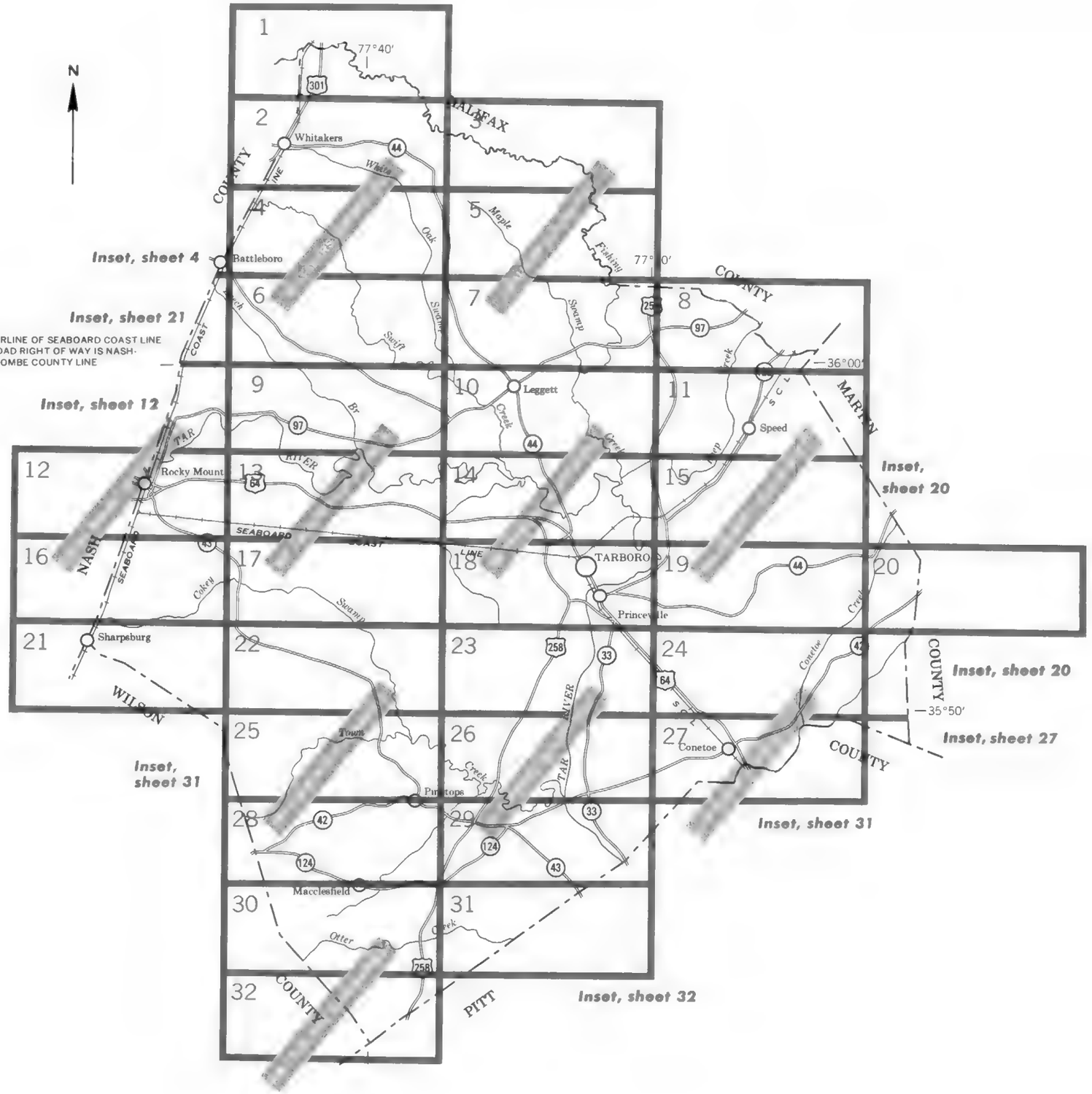
Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
NORTH CAROLINA AGRICULTURAL EXPERIMENT STATION
EDGECOMBE COUNTY BOARD OF COMMISSIONERS

GENERAL SOIL MAP

EDGECOMBE COUNTY, NORTH CAROLINA

Scale 1:253,440
1 0 1 2 3 4 Miles



INDEX TO MAP SHEETS

EDGECOMBE COUNTY, NORTH CAROLINA

Scale 1:253,440

1 0 1 2 3 4 Miles

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- National, state or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park, and large airport)
- Land grant
- Limit of soil survey (label)
- Field sheet matchline & neatline

AD HOC BOUNDARY (label)

- Small airport, airfield, park, oilfield, cemetery, or flood pool (Davis Airstrip; FLOOD POOL LINE)

STATE COORDINATE TICK

LAND DIVISION CORNERS (sections and land grants)

ROADS

- Divided (median shown if scale permits)
- Other roads
- Trail

ROAD EMBLEMS & DESIGNATIONS

- Interstate (70)
- Federal (416)
- State (52)
- County, farm or ranch (378)

RAILROAD

POWER TRANSMISSION LINE (normally not shown)

PIPE LINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad

DAMS

- Large (to scale)
- Medium or small (water)

PITS

- Gravel pit
- Mine or quarry

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (omit in urban areas)
- Church
- School
- Indian mound (label) (Indian Mound)
- Located object (label) (Tower)
- Tank (label) (GAS)
- Wells, oil or gas
- Windmill
- Kitchen midden

WATER FEATURES

DRAINAGE

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end
- Canals or ditches
  - Double-line (label) (CANAL)
  - Drainage and/or irrigation

LAKES, PONDS AND RESERVOIRS

- Perennial (water)
- Intermittent (land)

MISCELLANEOUS WATER FEATURES

- Marsh or swamp
- Spring
- Well, artesian
- Well, irrigation
- Wet spot

SPECIAL SYMBOLS FOR SOIL SURVEY

SOIL DELINEATIONS AND SYMBOLS (CeA, FoB2)

ESCARPMENTS

- Bedrock (points down slope)
- Other than bedrock (points down slope)

SHORT STEEP SLOPE

GULLY

DEPRESSION OR SINK

SOIL SAMPLE SITE (normally not shown)

MISCELLANEOUS

- Blowout
- Clay spot
- Gravelly spot
- Gumbo, slick or scabby spot (sodic)
- Dumps and other similar non soil areas
- Prominent hill or peak
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip (tips point upslope)
- Stony spot, very stony spot

SOIL LEGEND

The first letter, always a capital, is the initial letter of soil name. The second letter is a capital if the composition of the mapping unit is more variable than others in the survey area; otherwise, it is a small letter. The third letter is a capital which indicates slope. Symbols without slope letters (third letter) are those of nearly level soils.

NAME	SYMBOL
AsA	Altavista fine sandy loam, 0 to 3 percent slopes
AuB	Autryville loamy sand, 0 to 6 percent slopes
AyA	Aycock very fine sandy loam, 0 to 2 percent slopes
AyB	Aycock very fine sandy loam, 2 to 6 percent slopes
Ba	Ballahack fine sandy loam
BB	Bibb soils
BnB	Blanton sand, 0 to 6 percent slopes
Ca	Cape Fear loam
Cc	Chewacla silt loam
CeB	Conetoe loamy sand, 0 to 4 percent slopes
Cn	Congaree silt loam
Co	Coxville sandy loam
DgA	Dogue fine sandy loam, 0 to 3 percent slopes
DpA	Duplin sandy loam, 0 to 2 percent slopes
DpB	Duplin sandy loam, 2 to 5 percent slopes
DuB	Duplin-Urban land complex, 0 to 5 percent slopes
ExA	Exum very fine sandy loam, 0 to 2 percent slopes
Fo	Foreston loamy sand, 0 to 2 percent slopes
GoA	Goldsboro fine sandy loam, 0 to 2 percent slopes
GpA	Goldsboro-Urban land complex, 0 to 2 percent slopes
Gr	Grantham very fine sandy loam
Gt	Grantham-Urban land complex
GyC	Gritney fine sandy loam, 6 to 10 percent slopes
GyD	Gritney fine sandy loam, 10 to 15 percent slopes
Jo	Johns fine sandy loam
JS	Johnston soils
KeB	Kenansville loamy sand, 0 to 4 percent slopes
Lu	Lumbee fine sandy loam
Ly	Lynchburg fine sandy loam
MaA	Marlboro sandy loam, 0 to 2 percent slopes
MaB	Marlboro sandy loam, 2 to 6 percent slopes
Me	Meggett loam
Na	Nahunta very fine sandy loam
NoA	Norfolk loamy sand, 0 to 2 percent slopes
NoB	Norfolk loamy sand, 2 to 6 percent slopes
NoC	Norfolk loamy sand, 6 to 10 percent slopes
NuB	Norfolk-Urban land complex, 0 to 6 percent slopes
Pa	Pactolus loamy sand
Pt	Pits
Pu	Portsmouth fine sandy loam
Ra	Rains fine sandy loam
Ro	Roanoke loam
StB	State loamy sand, 0 to 4 percent slopes
TaB	Tarboro loamy sand, 0 to 6 percent slopes
Ur	Urban land
WaB	Wagram loamy sand, 0 to 6 percent slopes
WaC	Wagram loamy sand, 6 to 10 percent slopes
WaD	Wagram loamy sand, 10 to 15 percent slopes
We	Wahee fine sandy loam
Wh	Wehadkee silt loam
WkB	Wickham sandy loam, 0 to 4 percent slopes

EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 1

EDGECOMBE COUNTY, NORTH CAROLINA NO. 1

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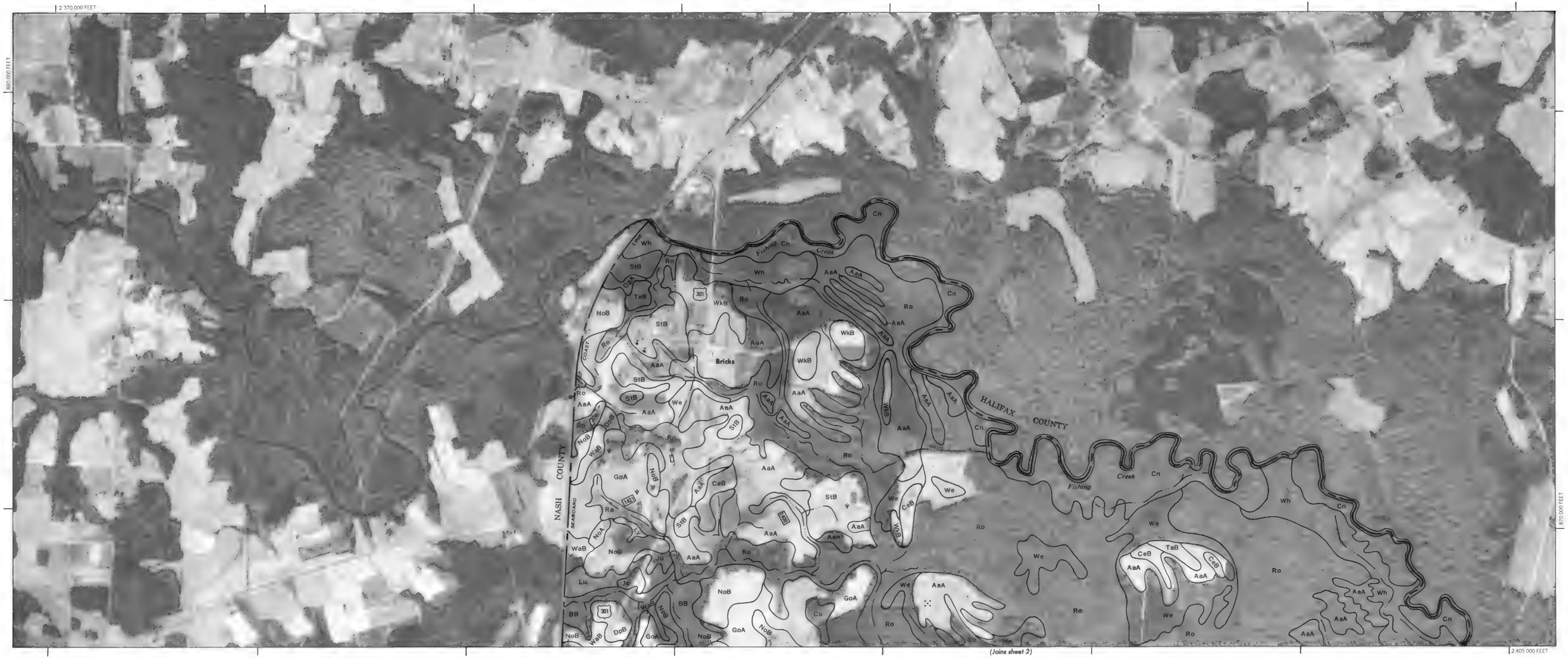

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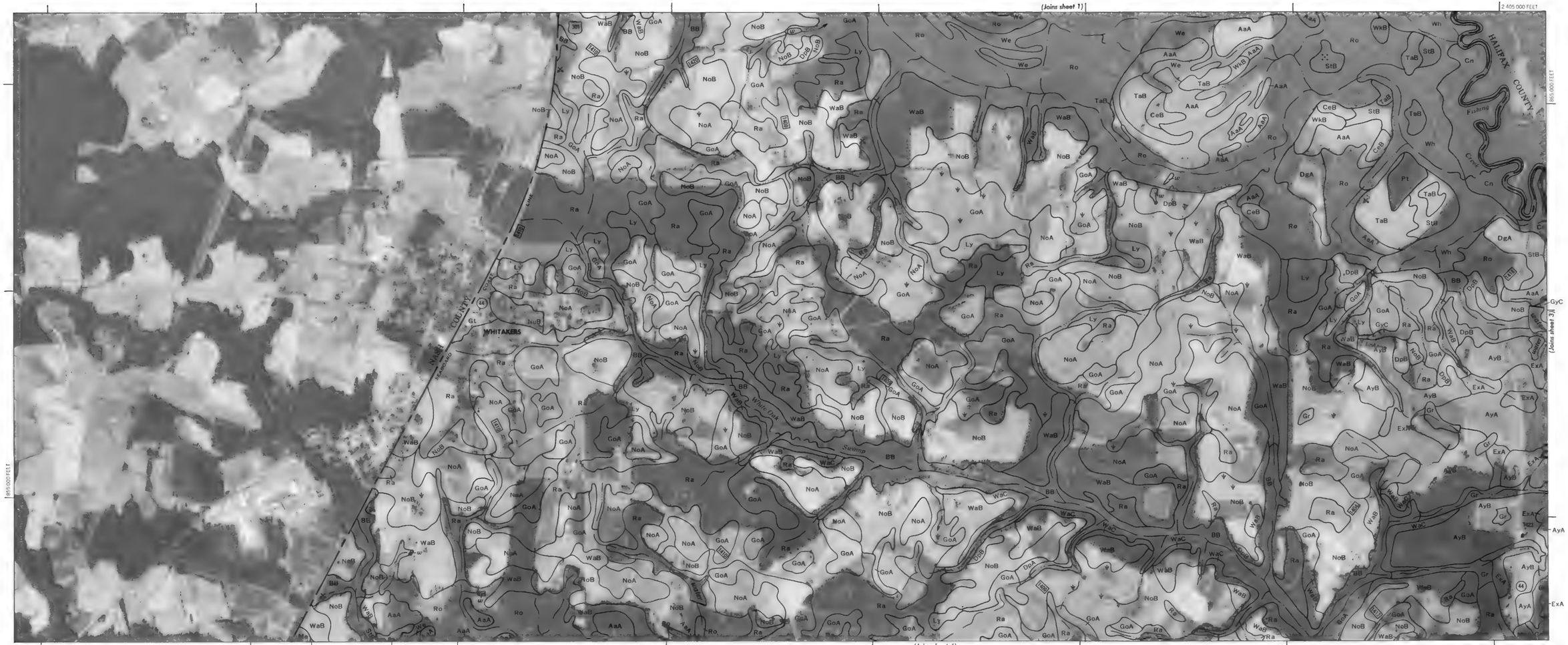

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EDGECOMBE COUNTY, NORTH CAROLINA NO. 2

N

EDGECOMBE COUNTY, NORTH CAROLINA NO. 3

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2 410 000 FEET

865 000 FEET

HALIFAX COUNTY

HALIFAX COUNTY

Fishing Creek

intermittent

(Joins sheet 2)

(Joins sheet 5)

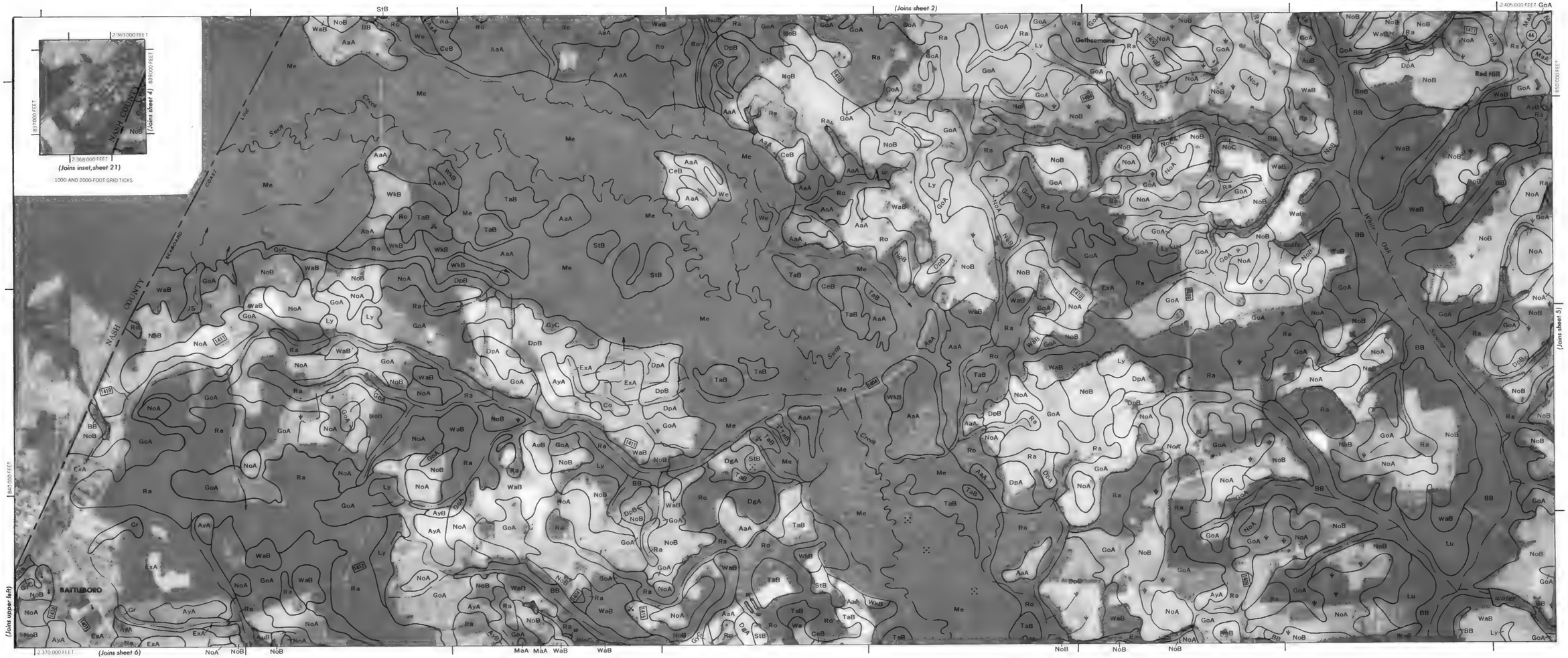
2 440 000 FEET

1 Mile

5 000 Feet

Scale 1:20000

EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 4



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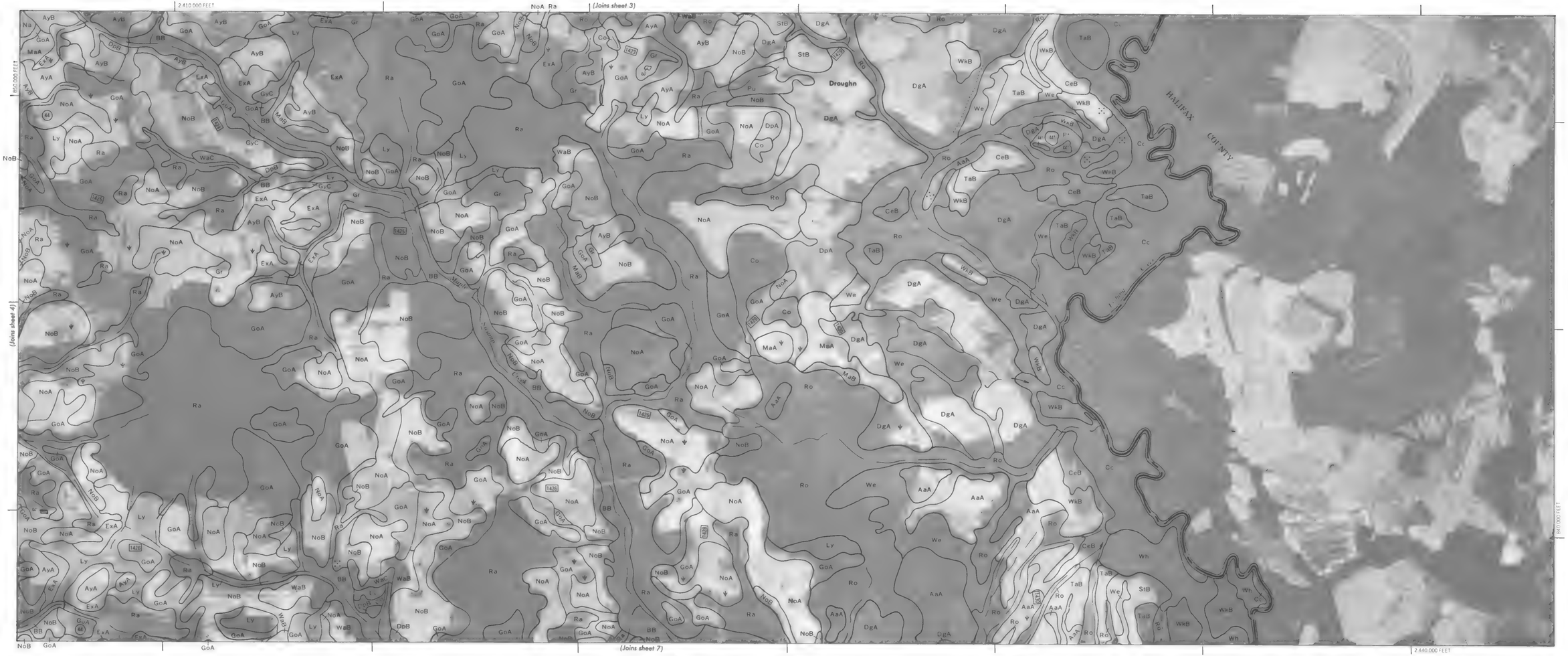

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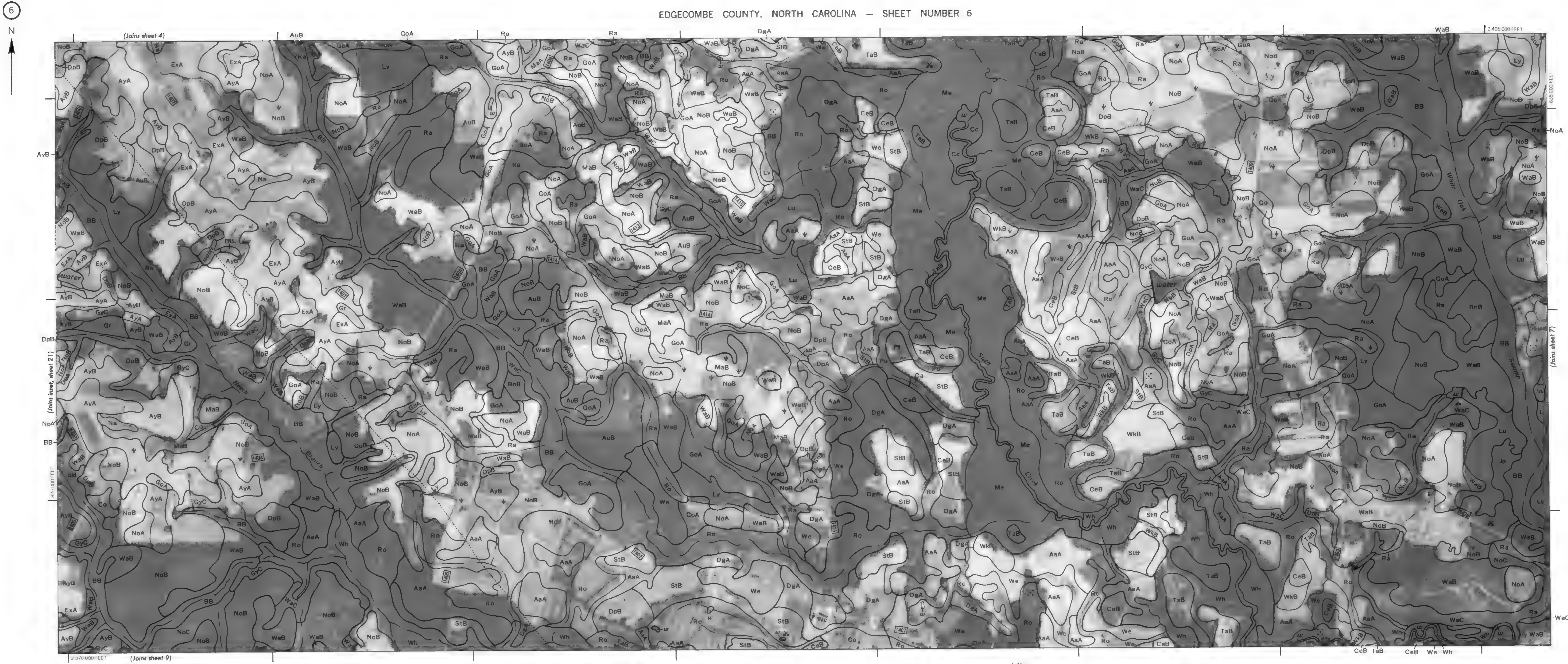

1 Mile
5000 Feet
Scale 1:20000

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N

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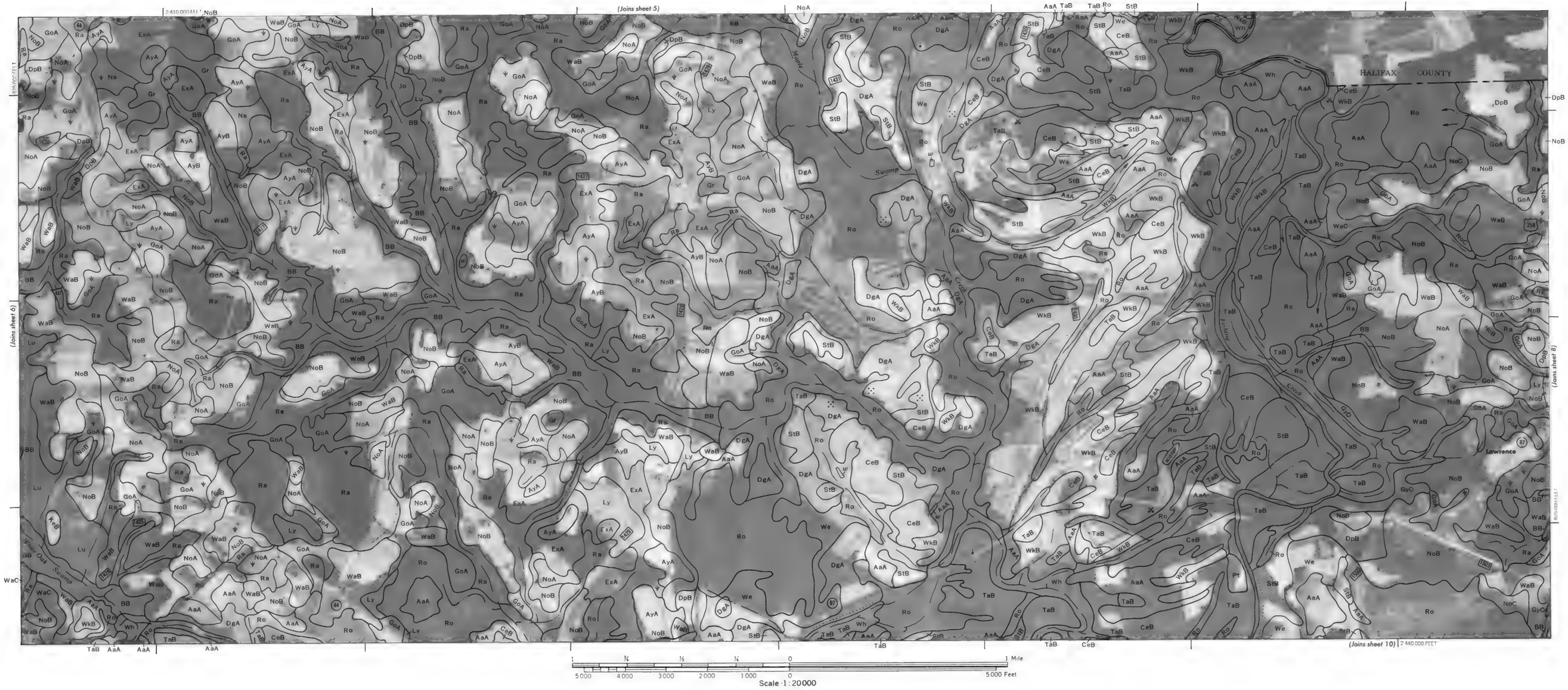
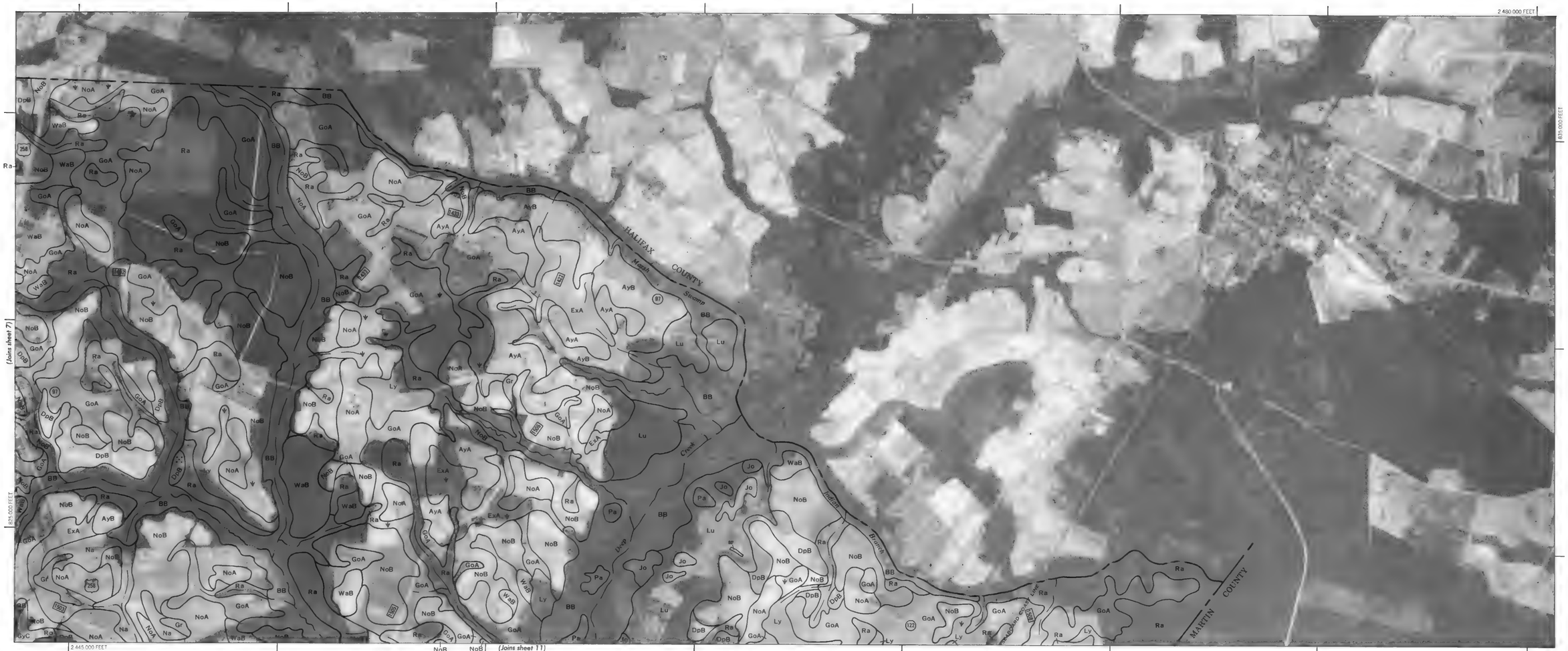


EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 8



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EDGECOMBE COUNTY, NORTH CAROLINA NO. 8

N

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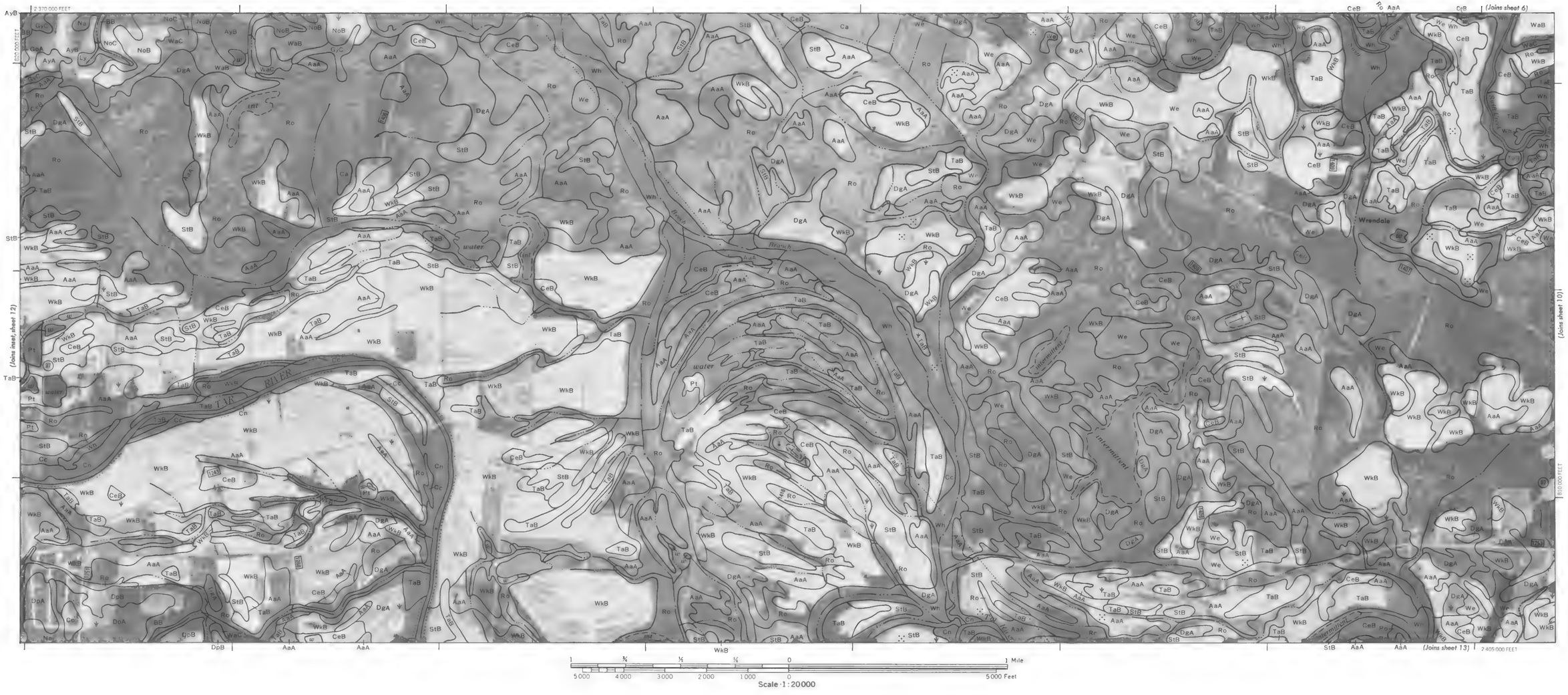
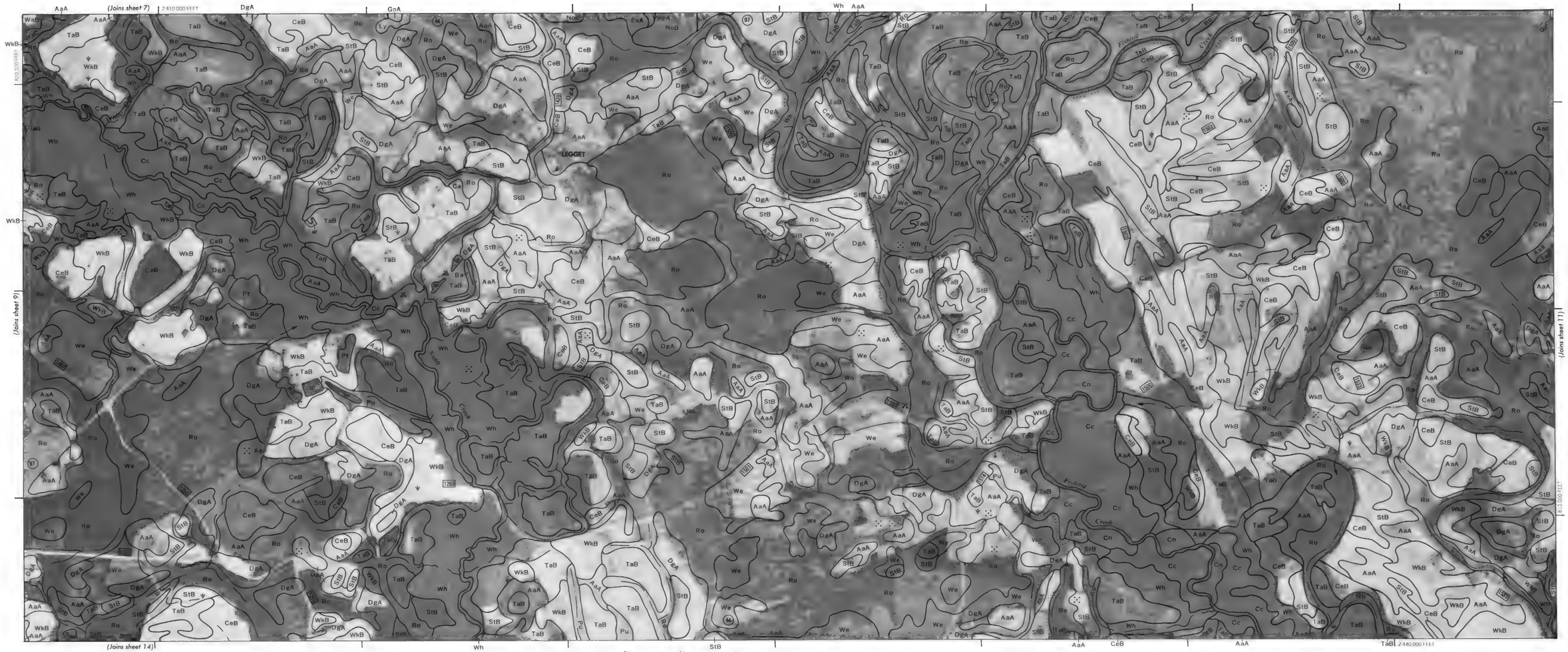


EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 10



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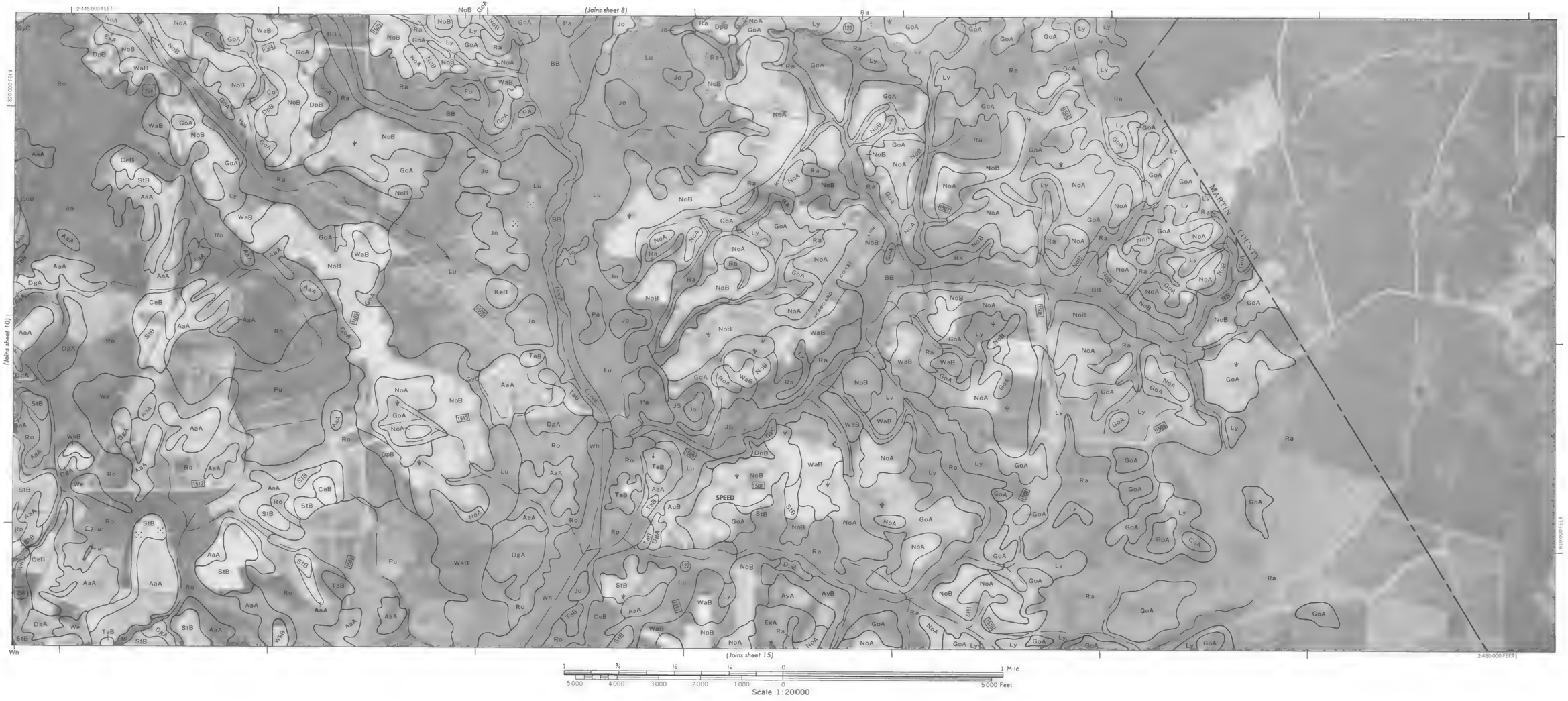
EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 11



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N

EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 12

1 ¾ ½ ¼ 0 1 Mile

5 000 4 000 3 000 2 000 1 000 0 5 000 Feet

Scale 1:20000

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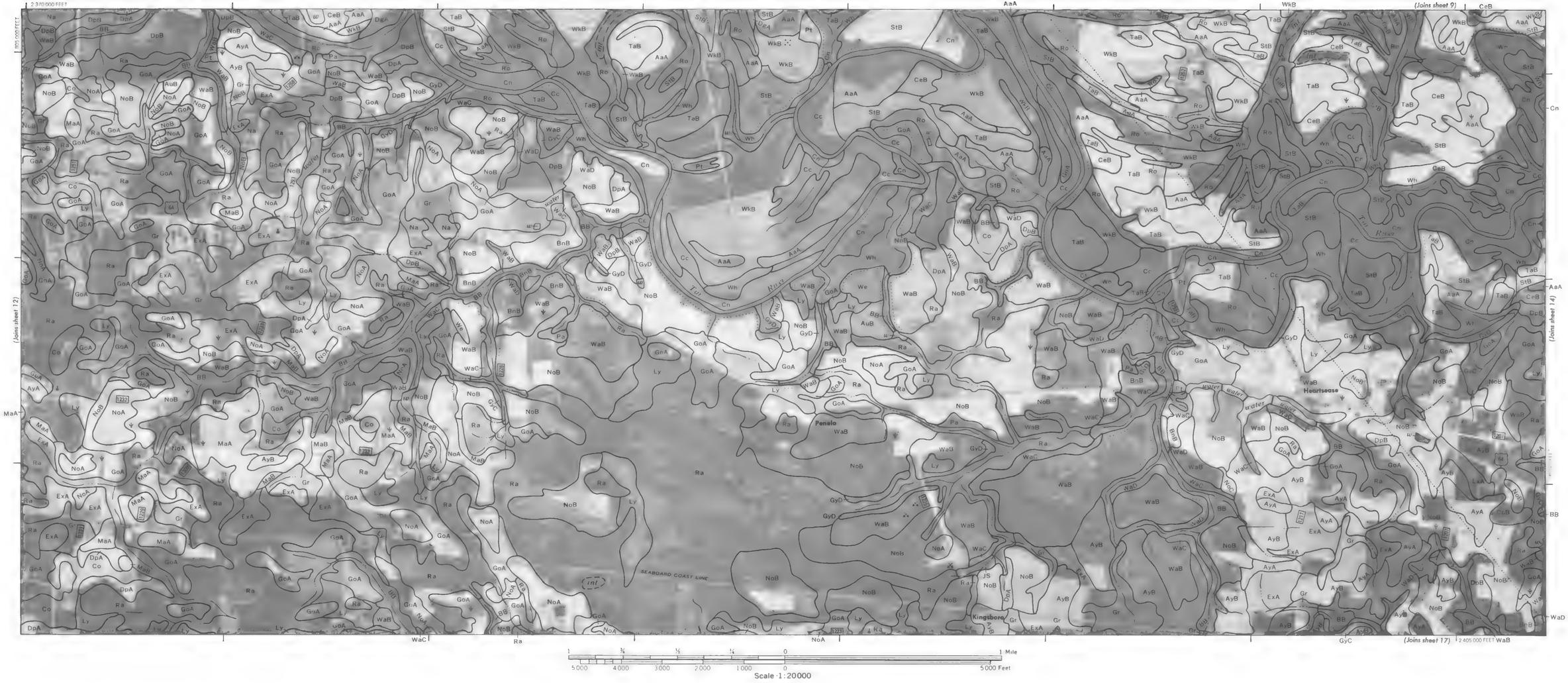
EDGECOMBE COUNTY, NORTH CAROLINA NO. 12

EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 13

13

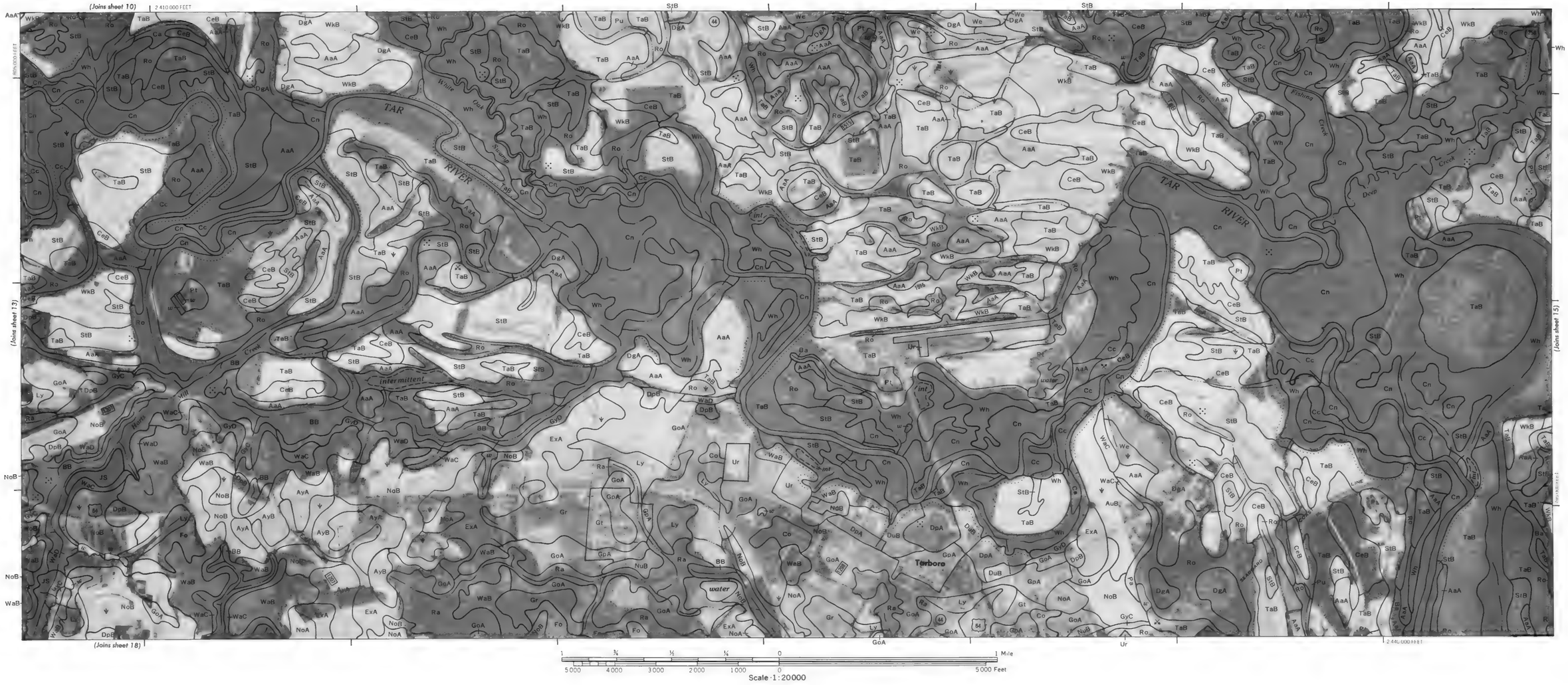
N



EDGECOMBE COUNTY, NORTH CAROLINA NO. 13

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 14

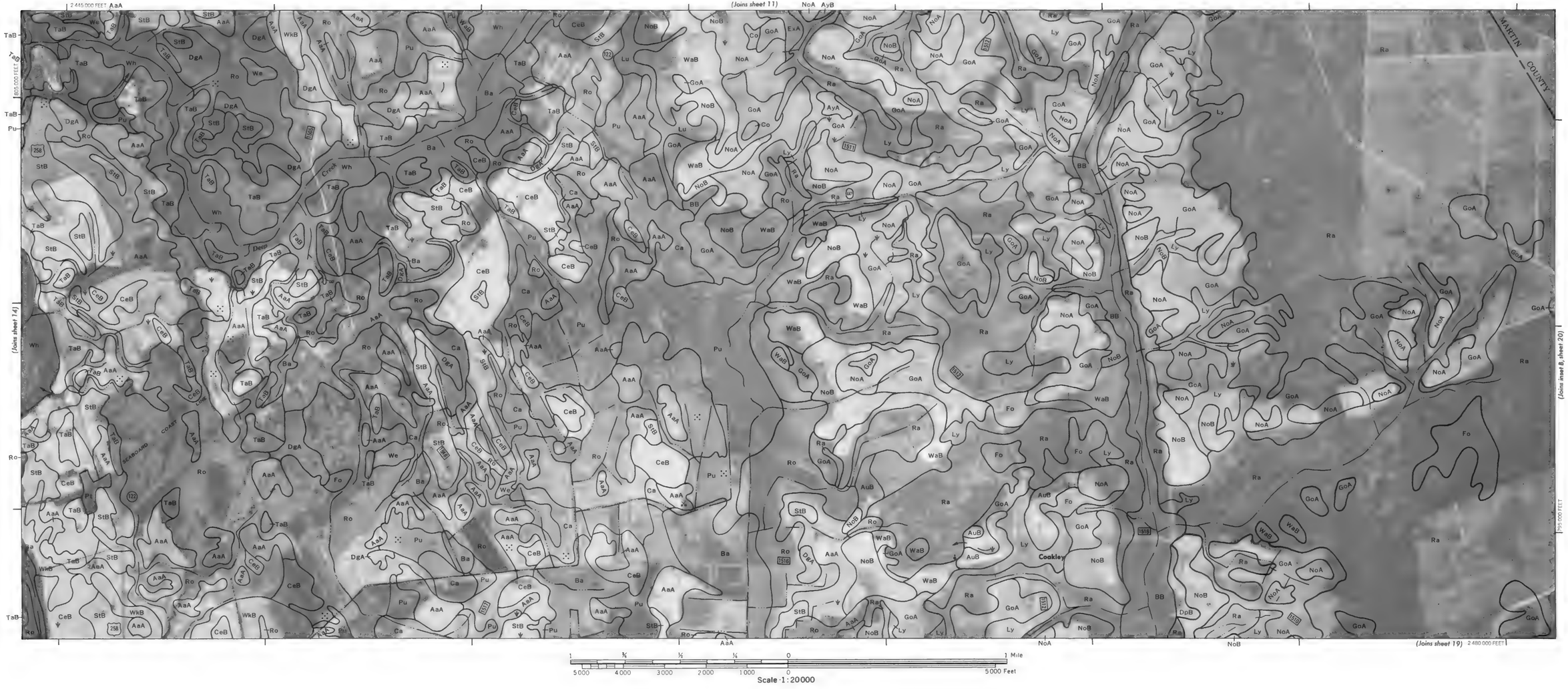


This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

EDGECOMBE COUNTY, NORTH CAROLINA NO. 14

EDGECOMBE COUNTY, NORTH CAROLINA NO. 15

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.



EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 16

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

EDGECOMBE COUNTY, NORTH CAROLINA NO. 16

N

EDGECOMBE COUNTY, NORTH CAROLINA NO. 17

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

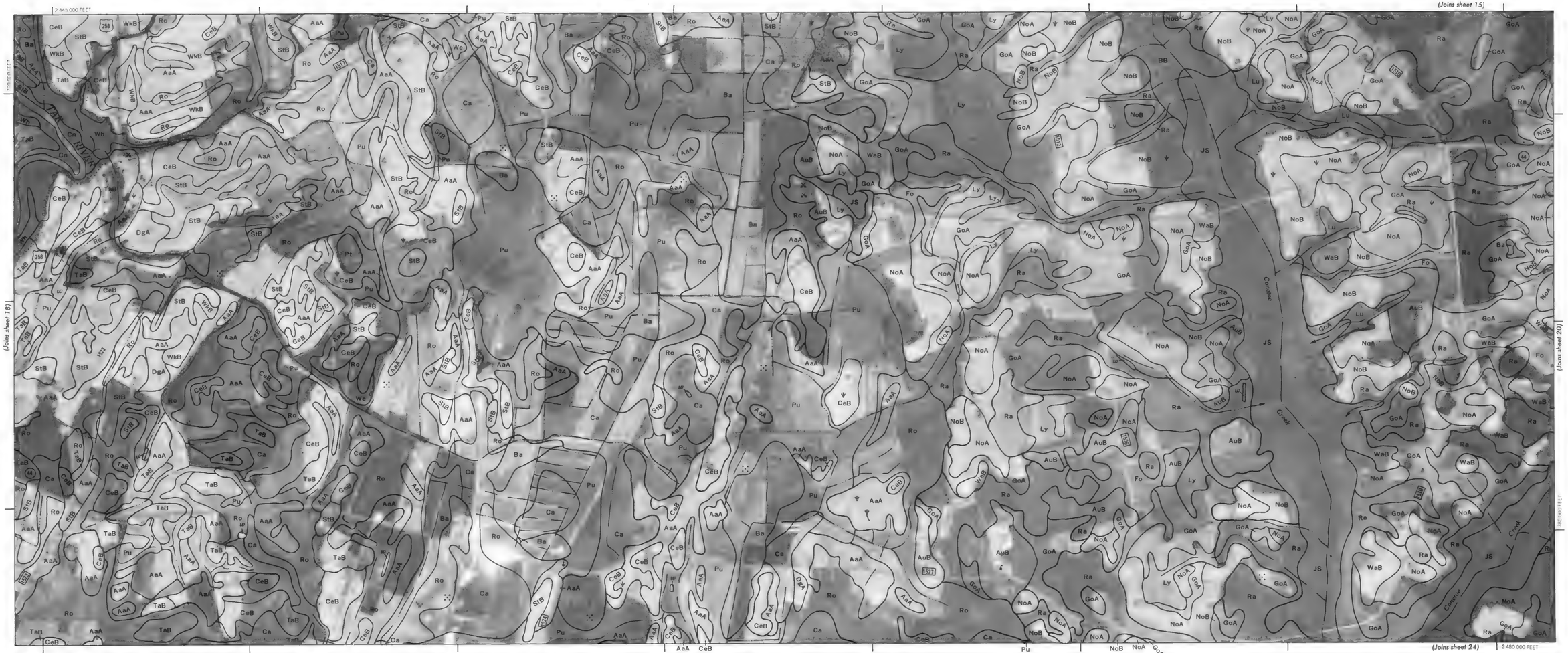
EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 18

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

EDGECOMBE COUNTY, NORTH CAROLINA NO. 18

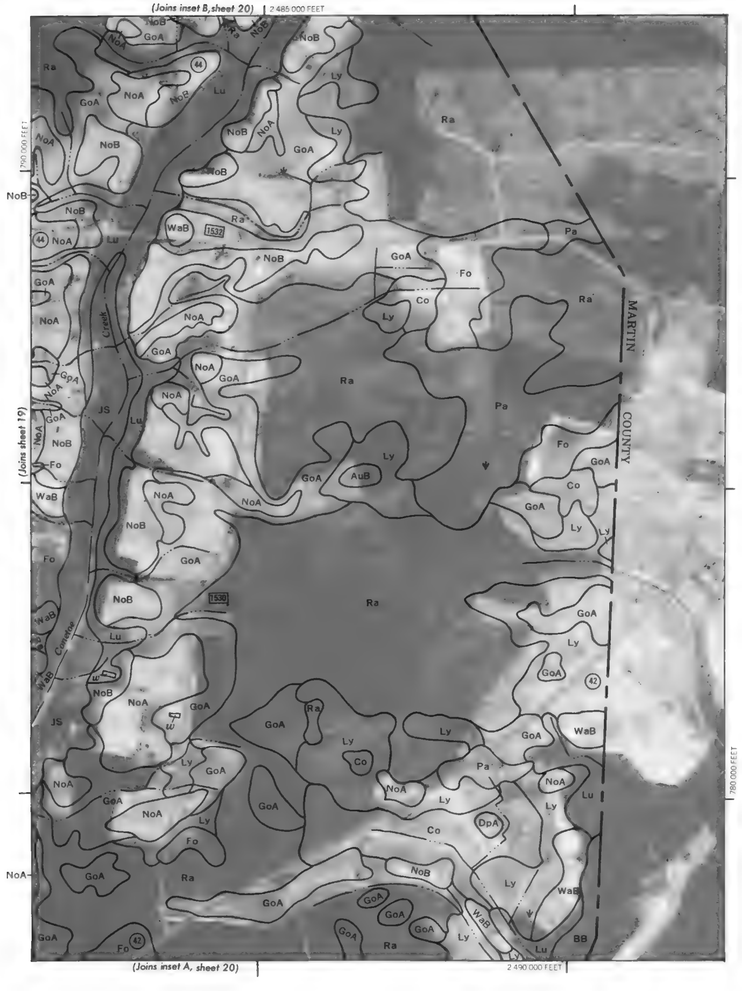
EDGECOMBE COUNTY, NORTH CAROLINA NO. 19

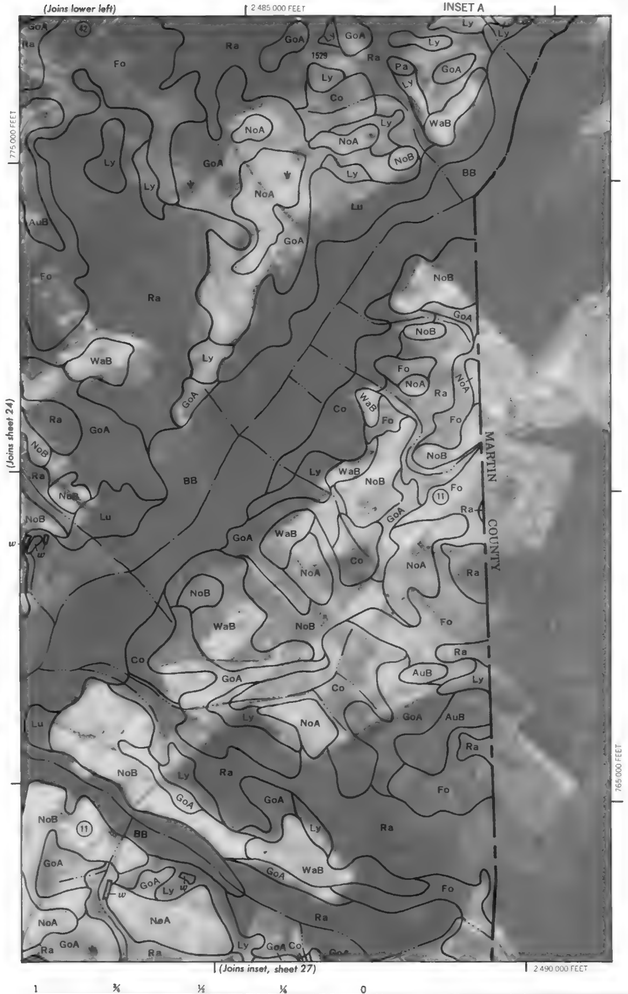
This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.



N

EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 20





1 ¾ ½ ¼ 0 1 Mile

5000 4000 3000 2000 1000 0 5000 Feet

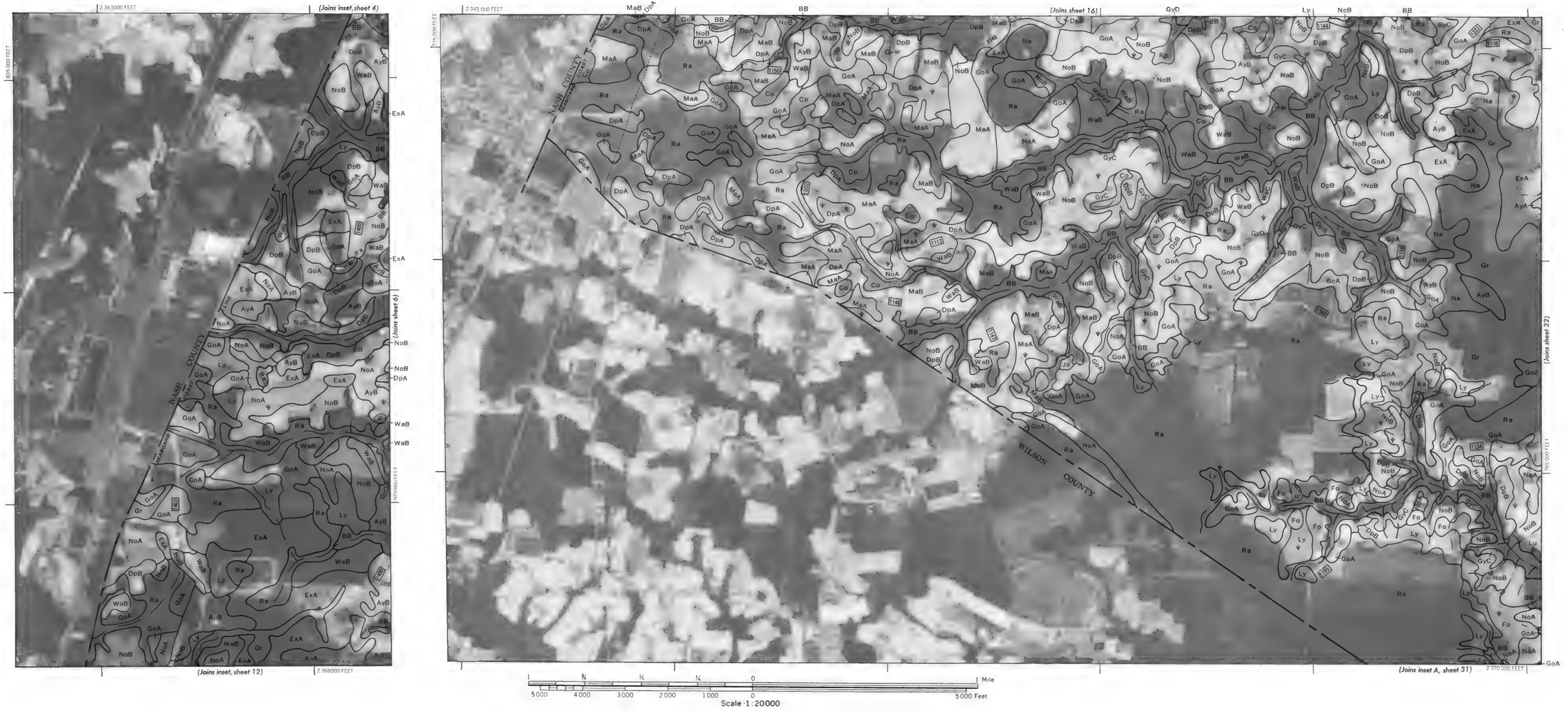
Scale · 1 : 20000

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

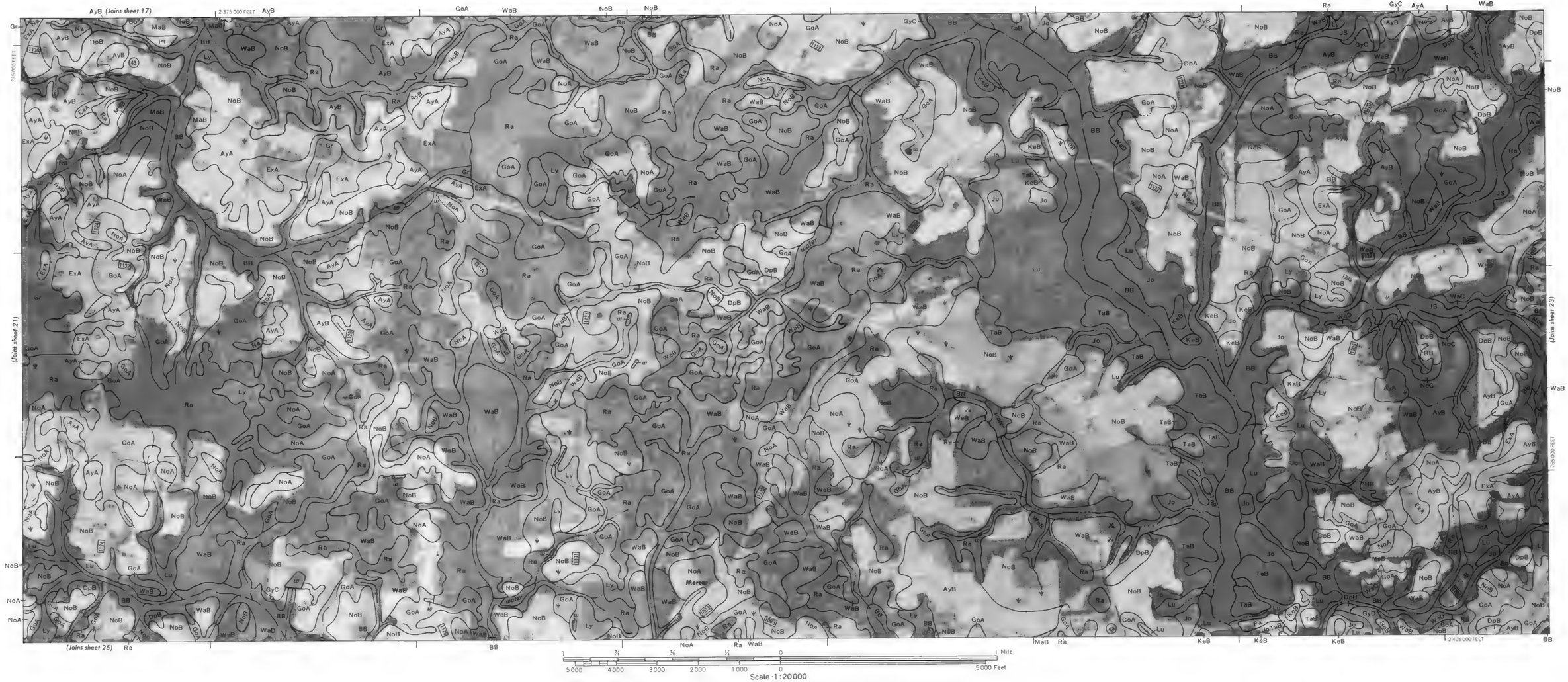
EDGECOMBE COUNTY, NORTH CAROLINA NO. 20

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

EDGECOMBE COUNTY, NORTH CAROLINA NO. 21



EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 22



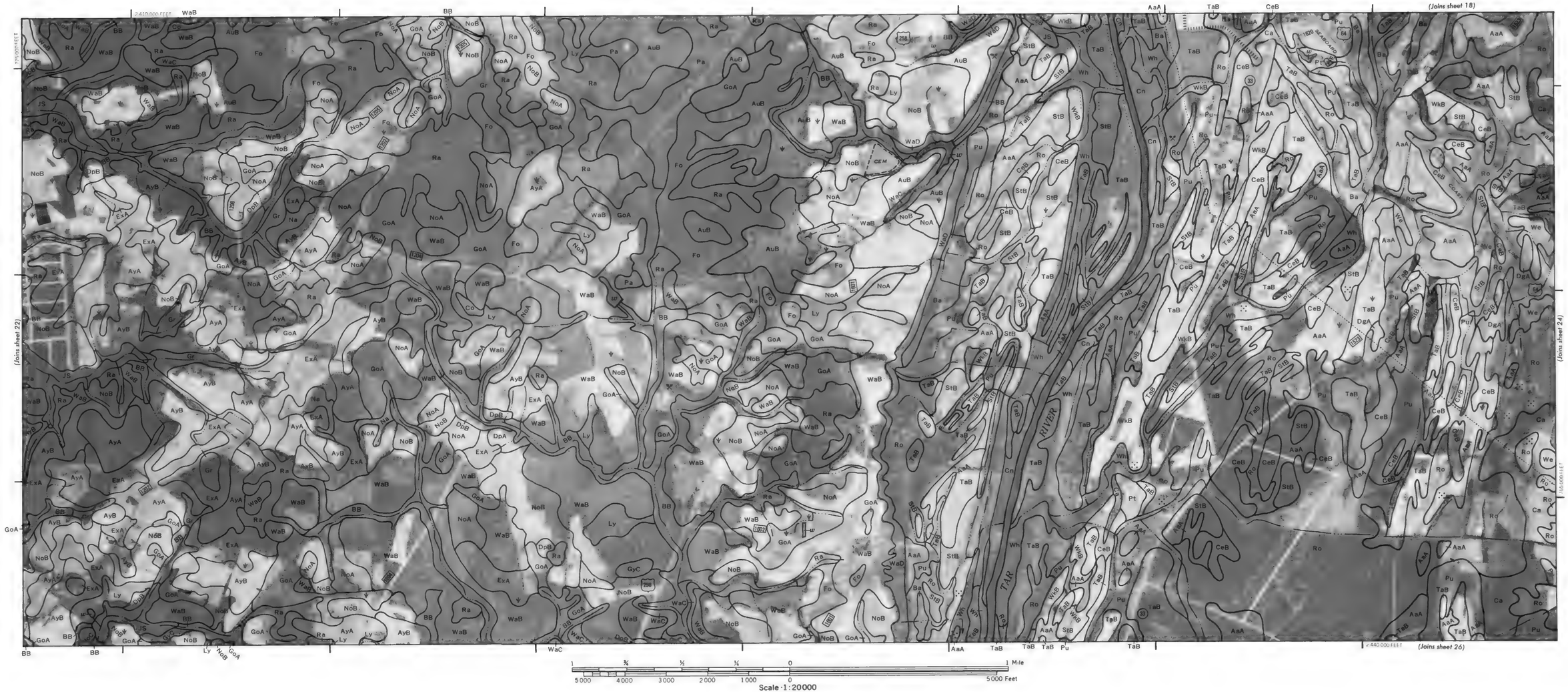
This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 23

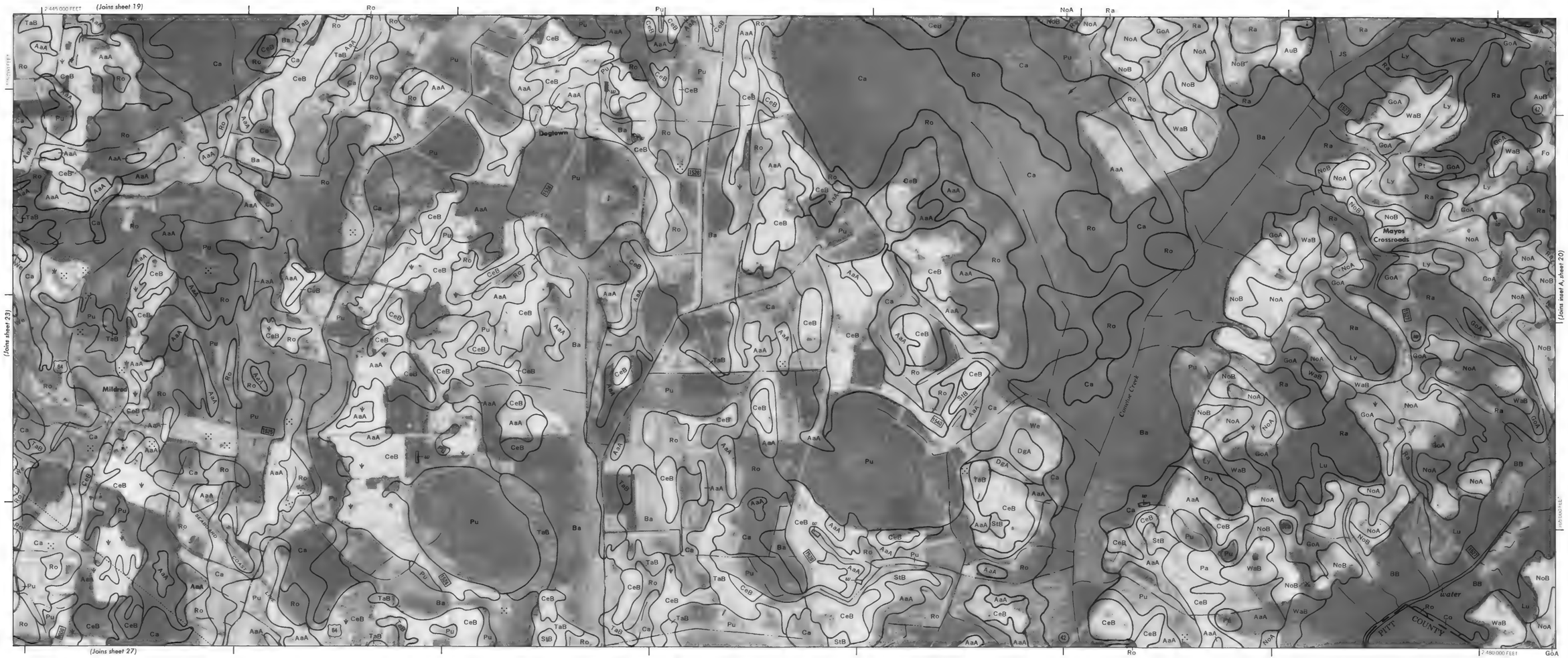
N

EDGECOMBE COUNTY, NORTH CAROLINA NO. 23

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.



EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 24



This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

EDGECOMBE COUNTY, NORTH CAROLINA NO. 24

EDGECOMBE COUNTY, NORTH CAROLINA NO. 25

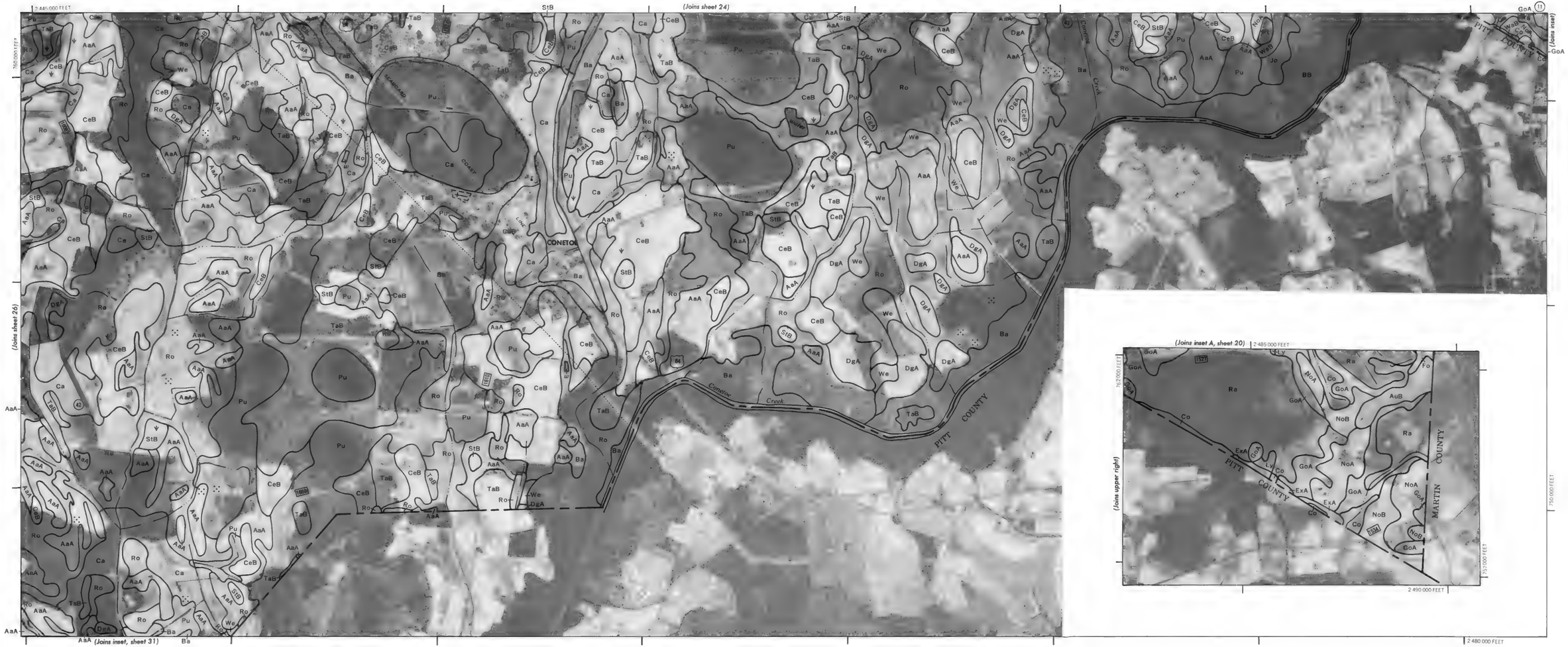
This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 26

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

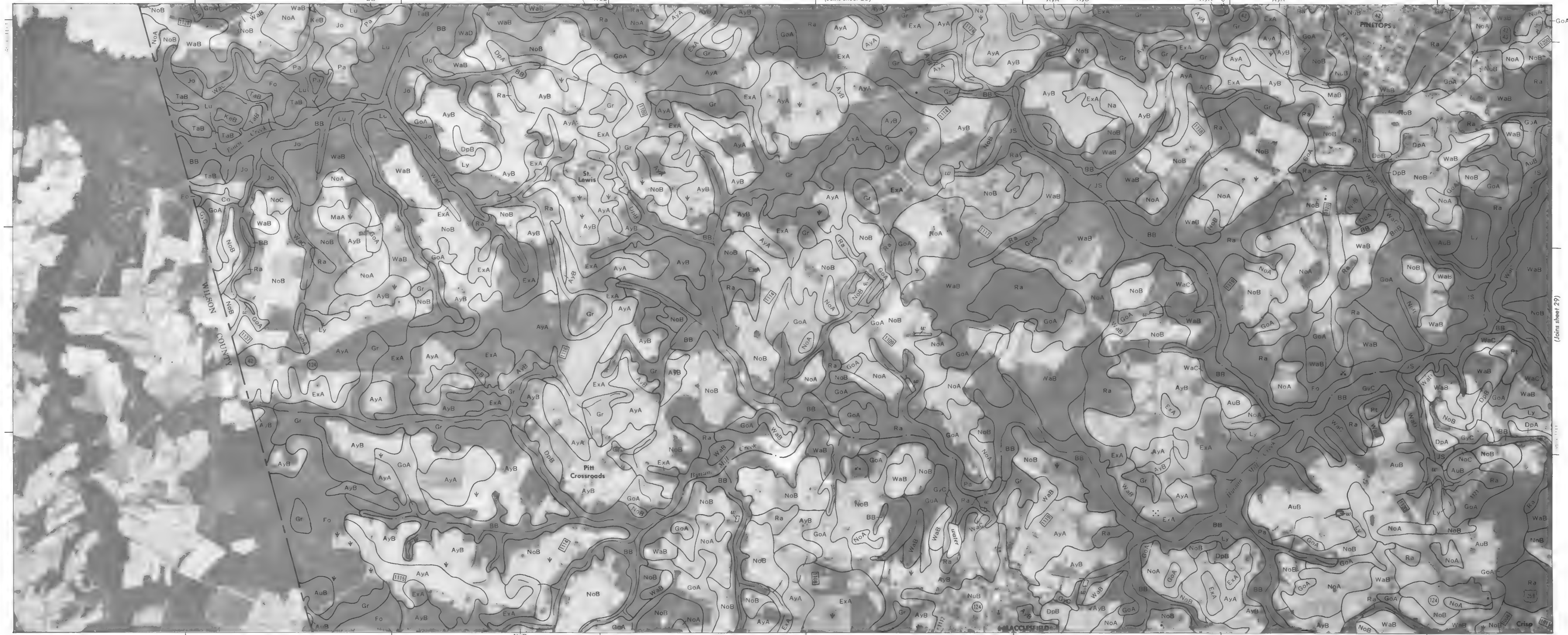
EDGECOMBE COUNTY, NORTH CAROLINA NO. 26

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.



EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 28

N

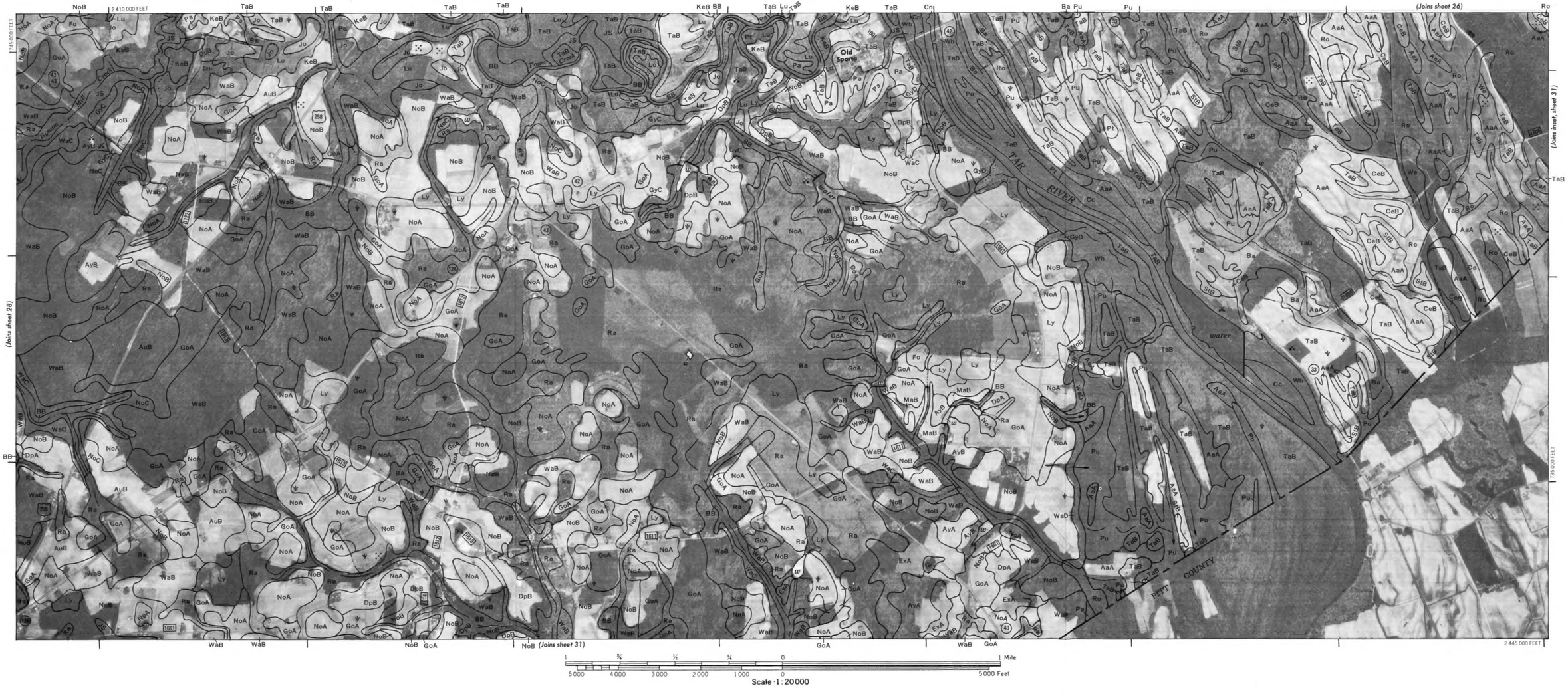


1 ¾ ½ ¼ 0 1 Mile
5000 4000 3000 2000 1000 0 5000 Feet
Scale 1:20000

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

EDGECOMBE COUNTY, NORTH CAROLINA NO. 29

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.



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EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 30

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

EDGECOMBE COUNTY, NORTH CAROLINA NO. 31

This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

N

2 410 000 FEET

730 000 FEET

(Joins sheet 29)

(Joins sheet 30)

(Joins inset, sheet 32)

2 445 000 FEET

720 000 FEET

740 000 FEET

PITT COUNTY

Cobb Town

INSET A

(Joins sheet 21)

2 368 000 FEET

760 000 FEET

765 000 FEET

(Joins sheet 25)

WILSON COUNTY

2 370 000 FEET

2000 AND 5000-FOOT GRID TICKS

INSET B

(Joins sheet 27)

2 445 000 FEET

745 000 FEET

(Joins sheet 29)

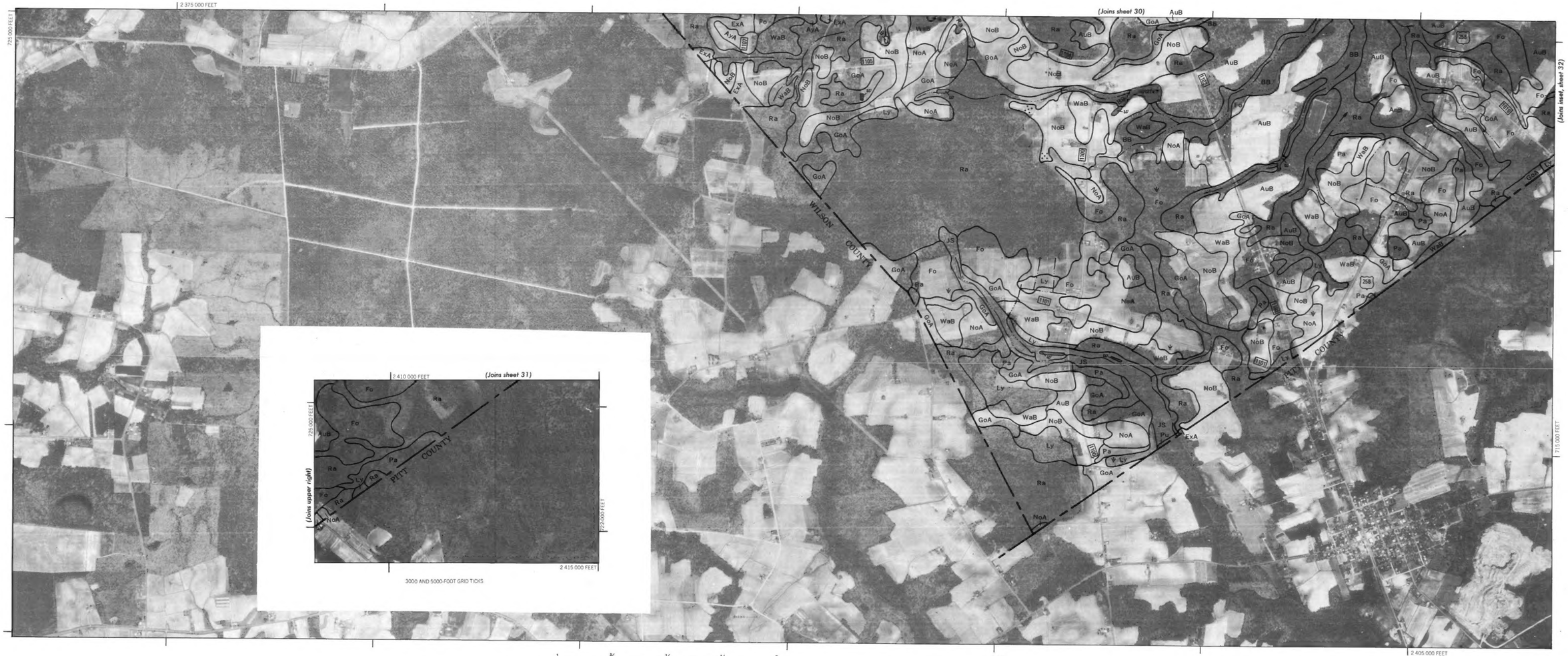
2 450 000 FEET

1 Mile

5 000 Feet

Scale 1:20000

EDGECOMBE COUNTY, NORTH CAROLINA — SHEET NUMBER 32



This map was compiled by U.S. Department of Agriculture, Soil Conservation Service and cooperating agencies on 1974 orthophotography obtained from U.S. Department of the Interior, Geological Survey.

EDGECOMBE COUNTY, NORTH CAROLINA NO. 32